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AMIGA SHOPPER

The top-selling serious Amiga magazine

ISSUE 9 • JANUARY 1992 • £1.25 • YOUR DEFINITIVE GUIDE

BEGINNERS START HERE

New to the Amiga? Turn to page 69

AMIGA ANSWERS

Got a problem? – We'll solve it! **Pages 41-71**



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The definitive Amiga Shopper A500P review contains a few surprises... The Amiga's future starts on p139

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AMIGA SHOPPER

AT A GLANCE GUIDE

To help you find what you want quickly and easily, this is a cross-referenced list of all the products and subjects covered in this month's *Amiga Shopper*. The subjects covered in Amiga Answers are detailed on page 41. The page numbers given are for the first page of the article in which the product is mentioned.

WELCOME

Just my luck isn't it? They make me the new Editor and the first thing I have to write about is the price rise! Well, we reckon we've been giving you such good value all year that you won't mind too much. Especially because we're now running a regular 172 pages a month – that's still got to be great value for just £1.25! Or look at it another way, when we started out, *Amiga Shopper* was only 116 pages so the extra 26p is buying you a magazine over half as big again! Convinced? – good! Not convinced? – don't worry I'll make it up to you. For I've got a few changes I plan to introduce over the coming months – nothing too drastic – just more of the same but better. More news, more tutorials, more of everything you want. And you can directly tell me what it is you want more or less of by taking a few minutes to fill in the questionnaire on pages 87 & 88. Because this is *your* magazine, so *you* should have your say (and, in any case, I'm sure Stuart Anderton, the previous occupant of this chair, will be keeping his beady eye on me from the lofty heights of Assistant Publisherdom I can tell you!)

In fact we have another two new team members to take us into the new year. The delightful Alison Harper takes over as Production Editor from Ian Wrigley who's gone off to work on some Mac mag, and the delectable Diana Taylor steps in as Layout Sub to replace Jacquie Spanton who's now chief crayon wielder on our baby sister mag *Public Domain* (check it out!).

Anyway, that's enough of the introductions - let's get the ball rolling for this issue. Apart from the usual definitive coverage of Video, DTP, programming, MIDI, education and business software, we've got Mark Smiddy overhauling the new A500 Plus, an all-you-need-to-know guide to Amiga amateur radio and, to kick off the ish, nine fact-packed pages of best buys. So, go to it and have a great New Year...

Andy Storer.

(The new) Editor

PUBLIC DOMAIN WORLD

There are thousands of Amiga programs which are available for little more than the price of a disk. And many more which allow you to try the software free before you buy. Each month in Public Domain World we examine the best of these programs and explain how to get hold of them.

This month our resident PD sampler Jason Holborn reviews six new utilities disks, a bunch of educational titles and the brilliant *Octamed* and *Module Master* music programs. Plus, *Landbuild*, a great fractal landscape generator, a videotext displayer and *SpectraPaint*. And that's not all!...

ENTER THE PD WORLD ON PAGE 154

AMIGA ANSWERS

SIXTEEN PAGES DEVOTED EXCLUSIVELY TO ANSWERING YOUR QUESTIONS

Every month in Amiga Answers our panel of experts answer more genuine reader questions than any other Amiga magazine. And for beginners our starter page will help you get to grips with your Amiga, and understand the other features in this month's issue.

We answer questions every month on Workbench • The CLI • Comms • Programming • DTP • Video • Business software and more.

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AMIGA SHOPPER
Issue 9 January 1992

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A Commodore Carol

COMMODORE IS SET to spend £5.5 million on advertising this Christmas. The period is naturally the most lucrative for computer companies, and Commodore is intent on making this one as lucrative as possible.

As well as the colour and mono ads to be placed in the national press and Sunday supplements, three different TV ads will be screened in the Christmas run up. These focus on the Amiga, the Commodore 64 ('the world's best selling computer') and CDTV – Commodore Dynamic Total Vision, in case you haven't heard of it.

The campaign for CDTV comes at the same time as a £100 price drop. Commodore's managing director, Steve Franklin, said: "Now that we have proof that CDTV is established in the general consumer market we are able to adjust the price to reflect this." Which presumably means that Commodore will sell more if they are cheaper.

Rumours have been heard of the development of a new monitor and a double density disk drive (1.6Mb formatted). These, along with the release of the A500 Plus, suggest that Commodore is finally taking the Amiga seriously and turning it into a truly professional product. Sadly, this is not reflected in the Amiga ad campaign, which features a young boy bored by the rain until he remembers he can play games on his Amiga. Still, as all *Amiga Shopper* readers know, there's more to computing than that...

PD Standard

IN A BID to gain credibility and customer confidence, a number of public domain libraries are banding together to form a PD standard. The move is a reaction to press criticism of the PD scene in general, where pornographic and dangerously violent material is available to anyone.

Called the Public domain Standards of Distribution, the scheme was set up by Essex Computer Systems and Goldstar Computers, and has more recently received the official seal of approval from Commodore UK. Commodore's Andrew Ball said, "Anything that serves to make that industry more mature has got to be good for the whole industry."

It is hoped that most libraries will join, after which they will be allowed to use the PSD logo in their adverts. What this gives the customer is a delivery turn-around time of 24 hours; virus-free software; a daytime manned phone for each library; a help line; acceptance of credit cards; no pornography; and, perhaps most importantly, a guarantee that another PD house will fulfill the outstanding orders of any house which collapses.

Any libraries interested in joining the PSD scheme should contact Essex Computer Systems on ☎ 0268 553963 or Goldstar Computers on ☎ 0942 895320.

Cads and bounders

APPLIED VECTOR TECHNOLOGY, the exclusive distributor in the UK for Imagine, has announced a free technical support service for users of the program. Also on offer is an upgrade from version 1.1 to version 2.1 for £81.

The company also sells the X-CAD series of programs, starting at £129 for X-CAD 2000.

Readers may be interested to know that the building pictured on the free calender which comes with this month's *Amiga Shopper* was in fact designed with X-CAD and rendered with Imagine. Applied Vector Technology can be contacted on ☎ 081 569 3338.

Tie a blue ribbon

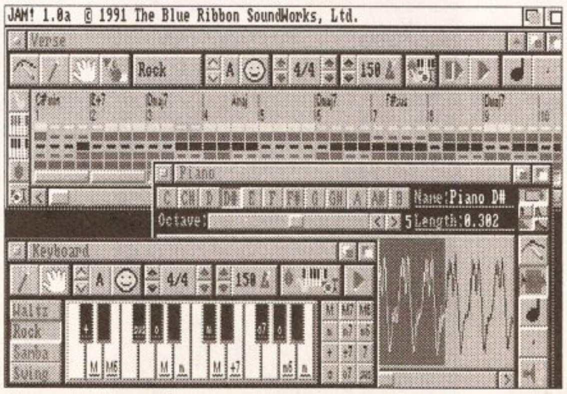
MAKERS OF THE innovative *Bars & Pipes* music software, Blue Ribbon Soundworks, have released a number of new products.

The *PatchMeister* (£79) is a MIDI patch librarian. It provides support for a multitude of synths, including: the Casio CZ series; the Roland D50, D110 and MT-32/CM64; the Yamaha DX-7/216, FB-01, RX-11, SPX90 and TX81Z. The program works in a graphical user interface, using 'point and click' editing options, and comes with a context-sensitive on-line help feature. The Amiga's keyboard can be used as a piano to immediately audition created sounds. The package can be fully integrated with *Bars & Pipes Professional.*

A new MIDI interface is winging its way to the UK. The difference bewteen this and others is that the new Triple Play Plus provides three MIDI outs, as well as a MIDI in and a MIDI through port. This means that MIDI data can be simultaneously sent to 48 channels. A price has yet to be announced.

Finally, the 'automatic music writing program', *JAM!* has been launched, but with a name change - or 'name enhancement', as the company likes to call it. *SuperJAM!* costs £99 and enables the inexperienced musician to create tunes with the aid of chord patterns, accompaniments and rhythm patterns in a number of styles (rock, funk and so on). Using a special feature known as TurboSound Technology, it is possible to play more than four sampled sounds at once. Included in the package is a sample editor.

The Blue Ribbon SoundWorks is on ☎ 010 1 404 377 1514. All its products are distributed in the UK by Zone Distribution ☎ 081 766 6564.



SuperJAM! supplies everything you need to make music except the toast

In brief

MICRONET RESURRECTED?

Micronet users casting for their on-line magazine fix since its demise may be interested in *SuperNet.*

Providing a service not dissimilar from that of *Micronet*, including news, features, reviews and letters, *SuperNet* is on open access on Prestel frame no *5333#. After the initial trial period, a year's membership will cost £60. The magazine is jointly developed by Prestel agency GWV and The PC User Group. More information on ☎ 071 379 5523.

ORGANISED MAYHEM

A new public domain library comes into being, called Chaos Consultants. Although stocking all types of PD, the library will be specialising in music.

This not only includes music programs such as sequencers, sample editors and so on, but tunes as well. The library hopes to publish music as licenceware, and is interested to hear from potential Amiga hit-makers. Chaos Consultants can be contacted on ☎ 0705 731835.

MORE MEMORIES, LESS READIES

Now is the time to expand, with Cortex having reduced the prices on its RAM units for the A500 and A1000.

Both the 2 and 4Mb boards have dropped by £30, now costing £239 and £319 respectively. The 8Mb board now costs £479 – a drop of £40. This latter has gained the Commodore seal of approval, which means that it is acknowledged to be system-legal. Cortex is on ☎ 051 236 0480.

RESOURCEFUL RETAILING

Mail order company Redlaw Resources is making a move into the public domain. It will be selling PD at prices from 35p per disk. A further offer to customers in the Bristol area is free delivery on the company's range of computers and accessories. Redlaw Resources is on ☎ 0272 760600.

VIDEO VANGUARD

G2 Systems has upgraded its two Amiga genlocks to 'Professional' quality. Both the VC1 and VC2 have enhanced stability and keying, and are suitable for use with U-Matic, HI-8 and S-VHS video formats. The VC1 costs £699.12; the VC2 costs £1145.62. G2 Systems is on ☎ 0252 737147.

New PC emulator

Vortex is releasing the latest version of its hardware PC emulator for the Amiga 500.

The new model comes with an Intel 80286 processor clocked at 16MHz and 512K of RAM. Space is provided for a maths co-processor. The board is compatible with standard Amiga hard drives and floppy drives.

The PC emulation runs alongside AmigaDOS, so it is possible to use the Amiga as a PC while running several Amiga applications at the same time. With a standard 0.5Mb Amiga, 640K will be available to the PC. Extra RAM is configurable as Extended or Expanded memory on the PC side as needed.

The board can make use of the Amiga's parallel and serial ports. It emulates several PC graphics standards: CGA, Hercules, Olivetti and Toshiba T3100, and one EGA/VGA monochrome mode. The price, without DOS, is £248. Distribution in the UK is by Silica Systems ☎ 081 309 1111. Vortex can be contacted on ☎ 010 49 7131 597214.

Pulling Power

FOR THOSE WHO just can't get enough, Great Valley Products is launching G-Force, a 68040-based accelerator card for the A3000 range.

The processor is clocked at 28MHz, providing 22 million instructions per second, although the board is designed such that the 33MHz version of the chip can be dropped in with the minimum of fuss, just as soon as Motorola has released it. The processor comes with two caches: 4K for instructions and 4K for data. It has space for up to 8Mb of 40ns 32-bit RAM, into which a copy of Kickstart can be placed to further improve performance.

Compatibility is achieved by providing a software-switchable fallback mode, whereby the user can choose to go back to the A3000's slow but trusty 68030 processor. The board costs £2199 and will be distributed by Silica Systems ☎ 081 309 1111.

More gadgets from Gajits

GAJITS USERS OF Sequencer One can add more cogs to their music machine with the release of the *Hit Kit!* and the *Sample Series*.

The *Hit Kit!* is an expanded version of what was previously given free with the Sequencer One Package. It consists of a large musical database which can be used to augment musicians' songs and help out beginners and those whose creative juices are at a low ebb. As well as complete pieces of music, individual drum tracks, bass lines and arpeggio patterns are also included. These come in a range of styles, such as ballad, blues, disco, acid house, latin and reggae. The *Hit Kit!* costs £29.95.

Getting hold of decent samples is always a problem for the Amiga musician. Gajit's *Sample Series* will help to alleviate this, by providing up to eighty samples on each of five disks. All samples are on standard IFF format, and may be used with Sequencer One as well as numerous other Amiga music programs. The disks cost £12.95. At present there are five volumes available: *Percussion & Effects*, *Guitars & Strings*, *Brass & Woodwind*, *Synth & Vocals*, and *Piano & Keyboards*. Each volume also contains a Sequencer One song which demonstrates the samples supplied.

Putting it in perspective

KEEP UP WITH the ever-changing face of Europe with a new program from Think Limited.

***Europe 1992* uses hypertext to communicate an overview of the European Community and its member states, along with comparisons with its major competitors. There are 38 pages in total, including 20 maps and 20 charts, covering such topics as economics, political trends and concerns, industry and institutions.**

The recommended price is £19.99, but the program is being offered at an introductory price of £15.99. Think Limited can be contacted on ☎ 021 384 4168.

Making the news? Make the call 0225 442244

Printing with light

SEIKOSHA IS LAUNCHING a new laser printer. The OP 104 prints four pages per minute at a resolution of 300x300 dots per inch.

The printer supports HP Laser Jet Series IIP emulation. Further emulation modes can be achieved with the addition of optional cartridges. These are: Epson FX850, Diablo 630, HPGL, PDL, IBM Proprinter, XL and XL24e.

Connection to the Amiga is via the RS232C serial port or the parallel port. 512K of memory is supplied as standard. This is expandable up to 2.5Mb in increments of 1Mb.

A range of 14 fonts is supplied as standard. This can be increased by standard HP font cartridges.

The printer costs £940 and is available from Seikosha's distributor and dealer network. Seikosha ☎ 0753 685873.



Take DTP into the space-age with Seikosha's laser printer

Chip on the old block

OWNERS OF OLDER Amigas need no longer covet their neighbours A500 Plus or A3000. MegAChip 2000/500, a product imported from Stateside company DKB Software, will enable a standard Amiga to access up to 2Mb of Chip RAM, the section of memory all too important for graphics applications.

The board comes with 1Mb of RAM on board, which combines with the 0.5 or 1Mb of memory already in the Amiga to give 1.5 or 2Mb, all of it accessible by the graphics chips. It will be especially welcomed by users too impatient to wait for Commodore's official Chip RAM/ *Kickstart 2* upgrade, scheduled for early in the new year.

The board is available in the UK from Aquarian PD (☎ 0703 685006) for £198. The price includes the new, Super Fat Agnus. Aquarian PD will install the board free of charge for those unprepared to dirty their hands provided they pay postage. DKB Software can be contacted on ☎ 010 1 313 960 8750.

RE-ROUTING

Owners of Complex Computers' *GBRoutePlus* route planning program can now customise it to suit their own personal requirements.

GBRoutePlus Edit enables users to enter the location of their own home, thier workplace, tourist landmarks, future road changes and so forth. The package normally sells at £29.95, but is currenlty available for £9.95. Complex Computers ☎ 0706 224531.

Diary Dates

December 5-8: Computer Shopper Show. Wembley Exhibition Halls, London. Cape Cowley Associates ☎ 061 480 9811.

December 14: All Formats Computer Fair. Royal Horticultural Hall, London. ☎ 0225 868100.

December 15: All Formats Computer Fair. University Sports Centre, Leeds. ☎ 0225 868100.

February 14-16: 16 Bit Computer show. Wembley Exhibition Centre, London. Westminster Exhibitions ☎ 081 549 3444.

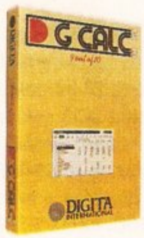
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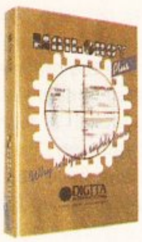




Home Accounts
Ideal for home users who want a simple low-cost way to plan and manage home finances. **£29.99**



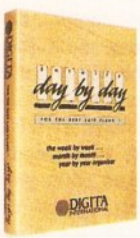
DGCalc
This fast, simple spreadsheet includes many advanced features, including a windowing facility, so that you can look at different parts of the spreadsheet at the same time. **£39.99**



Mailshot Plus
If you ever need to send out mailings or print labels, this program is for you. Animated labels appear on-screen as a continuous sheet, allowing you to scroll backwards and forwards. You can search, sort and detect duplicate labels, print side by side and much more. **£49.99**



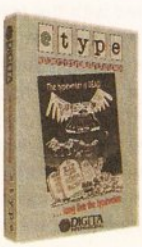
DGBase
If you're looking for fast access to information, and the ability to create customised reports, then this relational database is for you (ST). **£49.99**



Day-By-Day
An excellent way to get organised. You'll be reminded of birthdays, meetings and appointments. It includes month/week/day planners and automatic reminders of overdue events. **£29.99**



Personal Tax Planner
Plan your own tax with ease. This simple program will calculate your income tax liability, allowing you to perform instant 'what-if' calculations and produce pertinent facts about your tax position. A professional version is also available for accountants and financial advisers. **£49.99**

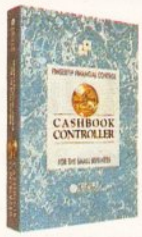


E-Type
Transform your computer into a typewriter. Because text is printed instantly, you can line up your form, press return and space a few times to move to the correct place, and then start typing. Ideal for filling in forms and envelopes. **£39.99**

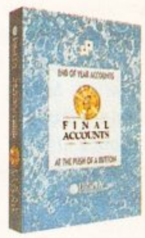
System 3
A suite of programs which perform all the basic functions for a small business. They may be used independently or integrated and include Cashflow Controller, Stock Control and Invoicing and Statements. **£59.99**



System 3e
Like System 3, but with extended capacity for customer accounts and stock items. **£79.99**

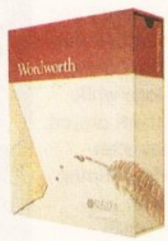


Cashbook Controller
Take the drudgery out of book keeping as this program will replace your cash and petty cash books. In addition to recording cash, bank and VAT transactions, you can enter credit sales and purchases, and for all these entries the program will automatically complete double entry routines, to ensure your records are always in balance. **£59.99**



Final Accounts
Using the information created with Cashbook Controller, this program will produce a complete set of accounts, including Trial Balance, Trading and Profit and Loss Account, Balance Sheet, as well as useful accounting ratios. **£39.99**

Cashbook Combo
A money-saving combination pack containing Cashbook Controller and Final Accounts. **£79.99**



Wordworth®
The graphical nature of Wordworth makes producing documents faster and easier. With the enhanced printing fonts, Collins Spelling Checker and Thesaurus, no other word processor comes close (Amiga). **£129.99**

The Digita range is available for Commodore Amiga, Atari ST and IBM PC unless stated otherwise, and every program comes with a seven day money-back guarantee.

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What a wonderful world

Cliff Ramshaw files all the hot stories from the UK's biggest ever Amiga show

With 36,000 people attending over its 4 days, the World Of Commodore was one of the most successful consumer shows ever. There were bargains galore, both in the packed Christmas Shopping Mall and on the stands of the many hardware and software manufacturers.

Moving swiftly past the boisterous displays of the game publishers (Ocean software had managed to install a fairground waltzer!), the serious Amiga enthusiast was confronted by a goldmine of products, both old and new.

Those game playing people did have a few tricks up their sleeves, though. Electronic Arts (☎ 0753 549442) had on display *Deluxe Paint IV* (£79.99) which among its enhancements includes full support for 4096 colours in HAM mode. Not too far away was the Mindscape stand, where the Miracle Piano Teaching System could be seen. This incorporates a keyboard and expert systems software to take users from musical ignorance to proficiency. It costs £299 from Mindscape ☎ 061 929 8578.

Over the sound of frying aliens and nuclear strikes the music of Zone Distribution (☎ 081 766 6564) could be heard. Zone was displaying the range of MIDI software from Dr T and Blue Ribbon Soundworks. Siren Software (☎ 061 724 7572) launched the Personal Sound System. For £24.99, this stereo amplifier plugs into the external disk drive socket and gives Hi-Fi sound quality through a pair of earphones. Microdeal (☎ 0726 68020) was demonstrating the Stereo Master Amiga sound sampler (£39.95) and AMAS, the Advanced MIDI Amiga Sampler (£99.95).

Soft-Logik (☎ 010 1 314 894 8608) demonstrated the imminent version 2.2 of *PageStream* (£199), the desktop publishing package. Enhancements include support for plotters, better printer driver support, and support for HotLinks. HotLinks is an addition to multi-tasking which enables programs to exchange data in real-time, obviating the need for saving and loading for file transfers across applications.

On the hardware front, Rossmöller (☎ 010 49 2225 13596), a German company new to these shores, was showing some exciting things. On display were a whole host of RAM expansions, Super Fat Agnus expansions, hard drives and accelerators, as well as a back-up system that stores data on a standard VHS video recorder. The company has no UK distributor as yet, but keep your eyes peeled for some high quality hardware in the near future.

The show certainly bodes well for the Amiga's future. Commodore's commitment to the machine and to further development is clear. Rest assured the launch of *Workbench 2* is just the beginning. Third party developers, too, have been doing their part to strengthen the Amiga's position as a professional machine. Many stunning new products were on public display for the first time at the World Of Commodore, confirming both the maturity and the dynamism of the market.

What most contributed to the show's success and to the ongoing success of the Amiga are the Amiga owners themselves. And they are a group whose numbers are swelling everyday – the attendance at this year's show was 100% greater than last year. Encouraged by this phenomenal success, plans are already afoot for another show in November 1992.

Chris Anderson, Managing Director of Future Publishing, which organised the show, was suitably satisfied. He told *Amiga Shopper*: "We're thrilled with the feedback we've had from both exhibitors and visitors. The show created massive excitement about Commodore products and the result in terms of money spent was incredible. You couldn't have asked for clearer proof of the health of this industry. Now we're busy looking at ways to make next year's even better. We can hardly wait."

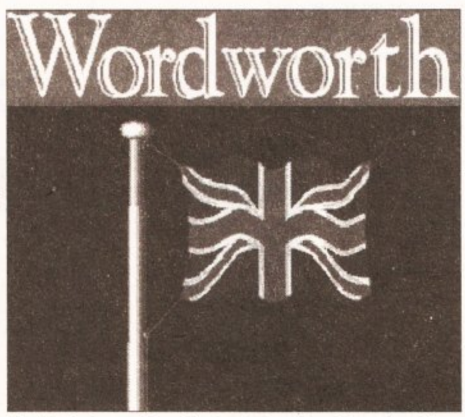
Multimedia Theatrics

Over at the Multimedia Theatre, Digita International somehow managed to sneak in between the presentations given by the various games publishers to show off its own products. These were *Wordworth 1.1*, a brand new upgrade wth page preview, PostScript printing and enhanced printer support for £129.99, and *Home Accounts 2* (£54.99),which is the latest version of their highly successful finance program.

Digita's presentation was suitably exuberant and patriotic, with a British flag flapping in the wind beneath the Wordworth logo while the national anthem played, followed by volley after volley of fireworks. Stirring stuff. Digita can be contacted on ☎ 0395 270273.

Checkmate Digital also put on a show, with the Black Belt Systems HAM-E board. This fits to all Amigas and provides a cost-effective way of obtaining 24-bit colour by providing up to 262,000 colours from a palette of 16 million. HAM-E costs £299 for a resolution of 384x560. HAM-E Plus, which provides a resolution of 768x560, costs £399.

Checkmate Digital can be contacted on ☎ 071 923 0658.



Digita International stand to attention, for the country and for the customers

THE STAND OF THE SHOW? – GVP MAKES A SERIOUS IMPACT

The Great Valley Products stand was all-a-buzz, hardly surprising considering the kit that was on display. Impact Vision 24 was showing its true colours: a 24 bit frame buffer for the A2000 and A3000 that provides a PAL resolution of 768x625 with 16 million colours, and without any flicker. The display can be double buffered to give two 12 bit frames of 4096 colours if required. The board includes both an analogue and digital genlock for composite and RGB external signals. It also has a real time 24-bit frame grabber, and can produce picture in picture, whereby a live video source is shown in a window on the Amiga or 24-bit graphics screen. Only £1799!

Also on display was the Digital Sound Studio, including a stereo sound sampler to fits the Amiga's parallel port and a software which provides a sound editor and 4-track sequencer. It costs £59.95.

The G-Force accelerator board, mentioned elsewhere in the news section, was flexing its muscles on an A3000 for the first time in this country. A500 owners wanting to improve their prowess will be interested in the Series II A500HD8+. It incorporates a hard disk, an external SCSI port and up to 8Mb of Fast RAM, and there is space inside the box for a 16MHz 286 PC emulator, rumoured to be the one produced by AT-Once. Available by January for about £200. A 40MHz 6030 processor is also expected, again fitting in the box. The unit, with a 52Mb hard disk, costs £399. GVP ☎ 010 1 215 337 8770. All GVP products are distributed in the UK by Silica Systems ☎ 081 309 1111.

Groovy Graphics

A new HAM animation package was being demonstrated on the Rombo stand. *Take-2* has been developed by a Belgian animator from the Royal Academy of Fine Arts in Ghent. It enables a user to create animations in anything between 2 and 4096 colours. Images can be grabbed directly from Rombo's Vidi Amiga and subsequently layered. Four channels of stereo sound can also be added. *Take-2* costs £99.95 from Rombo ☎ 0506 414631.

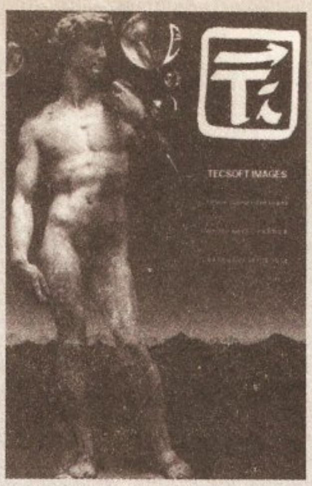
A new release for users of Vidi Amiga is the Bus Adaptor card, enabling the Vidi Amiga to be connected to the Amiga's expansion slot rather than the parallel port, thus doubling the speed. It costs £69.96 and includes updated copies of VidiGrab and VidiChrome.

The Amiga Centre Scotland had considerable new launches. Among these was the Harlequin+ 32 bit framebuffer. This offers a number of enhancements over the standard version, including 4 new graphics modes, colour cycling, full-screen overlay and up to six frame buffers. Price is yet to be announced.

The DVE-10P is a digital video effects system that fits all Amigas and provides a genlock, video mixing, S-VHS in and out, picture in picture, digitiser, and audio mixer. Price will be around £940.

The PAL version of DCTV was there. This includes a colour digitiser and provides millions of colours and the capability for real time animation using Digital Creations' unique digital composite technology. This has also been licensed by Commodore for use in CDTV (confused yet?). It will cost less than £500.

Alpha channel genlocking for both the Amiga and the



A touch of post modernism as naked computer power meets classical aesthetics

Harlequin is provided by the GST 2500 Alpha+ for around £1760. Other new products included *TV Record* (£176.25), single frame recording software; *TV Display*, a public domain program that previews 24-bit images on an Amiga screen; and version 1.5 of *TV Paint* (£940), an advanced 32-bit paint program for the Harlequin graphics board. Contact Amiga Centre Scotland on ☎ 031 557 4242.

Performance Systems' stand drew the crowds. The PAL version of the Mandala Virtual Reality Authoring System was launched here. A video camera displays a real time image of a person over an Amiga screen in front of them. In this way a person's movements in thin air can be translated into mouse movements on the screen. The system was connected via MIDI to a synthesiser as would-be musicians stood before it and plucked virtual double basses and struck virtual drums. Two versions of the system are available: Mandala System-1 combines the user's image with a computer display. System-2 enables a further level of real-world video to be incorportated. Prices start at £1762.50. Performance Systems ☎ 081 207 2256.

High on software

Big news for programmers came with the release of version 3 of *DevPac* from HiSoft. The new assembler is 40% faster than its predecessor, and supports all Motorola processors from the 68000 to the 68040, including the maths co-processor. An even bigger speed increase can be gained by using the facility of pre-assembled header files. The package includes HiSoft's brand new Workbench 2 compatible editor. Multiple windows are supported, as are macros, book marks and mouse controlled block marking. The debugger has also been updated. It debugs at source level, with as many windows as required, and will display library names when library routines are called. *DevPac 3* costs £69.95 (£34.95 for upgrade) from HiSoft ☎ 0525 718181.

Educating Amigas and CDTV

Commodore's commitment to education was evident: a good proportion of its stand had an educational slant. Many believe that most software houses aren't making enough of the Amiga's facilities in terms of education, and that the software available fails to address children's needs. Change is on the horizon.

Sally Systems displayed *Travels In Time*, a spelling program for the dyslexic child. It contains a number of games, set in medieval, industrial and future time periods. A large database of words is kept, with over 250 rules (and exceptions) of spelling. Tutorials cover groups of words, and results are recorded so the teacher may analyse a pupil's performance. There is also a facility to print reward cerificates on the pupil's achievement of pre-defined goals. The program costs £411.25. Sally Systems ☎ 0628 24626.

Think Limited was showing its clip art and interactive jigsaw puzzles. Also present was *Talking Turtle!*, a disk and manual guide to Amiga Logo. Logo is a popular programming language in schools: with it, children can quickly grasp thorny concepts such as recursion and procedures. The package includes suggestions for classroom activities. It requires Amiga Logo and costs £19.95. On the hardware side, the company was displaying Touch Window, a transparent cell which fits over a standard screen and enables the user to select icons and options with a finger instead of a mouse – much more intuitive, and even menu selections are possible. Touch Window costs £317.25. Think Limited ☎ 021 384 4168.

It's good to see the Amiga shaping up on the educational side of things. Such applications were in evidence for CDTV. Fears that it would turn into an expensive games console were allayed with releases such as *Japan World*.

The impetus for this was given when a Japanese manufacturer opened a plant in Derbyshire and the council decided it would be a good idea to teach the people living there something of their workmates' culture. The program contains chapters on topics such as history, shopping, sport and leisure and geography. Quizzes in trivia and vocabulary are included. *Japan World* costs £49.99 and is published by Global Learning Systems ☎ 0332 31132.

Swanfast Computers was showing *Learn French With Asterix*, a program which makes the leap from text-based linguistics to audio. As well as hearing Asterix and co speak, the student may also record his or her own voice (with a microphone and sampler) to make comparisons between the two. French can be rapidly improved. Two disks are available, at £29.95 each. Swanfast is on ☎ 071 731 0846.

Continuing the international theme, Virgin Multimedia displayed *North Polar Expedition*, a CDTV title which sets a group of five students off to the North Pole. With the aid of footage taken during the real expedition, it teaches inter-personal skills, geography and social studies. It costs £29.99.

Also on display was *MusicColor*, adapted from the Tobin Music System, which teaches music and composition through colour graphics. The program can be used as part of the National Curriculum. (Price to be confirmed). Virgin Multimedia ☎ 081 960 22550.

CDTV was much in evidence, and so were peripherals for it. Most exciting among these were the keyboard (at £49.99) and the external disk drive (at a costly £99.99). Buy these and you could make your CDTV into a real Amiga.

Alternatively, turn your Amiga into a CDTV. On show for the first time was a prototype version of the A690, Commodore's CD-ROM drive. This plugs into the A500's expansion slot with full CDTV compatibility. There has been debate on whether the finished version will have a through-port for further expansions. The prototype had no throughport, but Commodore says the design is far from finalised (just as well, as a lot of A590 owners would be miffed). The A690 should hit the streets January or February at less than £300.



Just one of the stunning images from *Real Things*

THE LAW OF THE JUNGLE

People were fighting tooth and claw to get a look at the RGB Studios stand, where the latest two releases in the *Real Things* animated clip art series were on display. These are *Safari* and *Sea Life*, both of which contain digitised images which have been subsequently touched up in a paint package. The resulting images are stunning; the animals move with a fluidity that has to be seen to be believed. Both *Safari* and *Sea Life* come on two disks, and need a 1Mb Amiga with *Deluxe Paint III* or *IV* to run. They cost £29.95 each from RGB Studios ☎ 082 581 2666.

stereo MASTER

When you are considering purchasing a sound sampler there are plenty to choose from. Why compromise? your choice should be the new full featured STEREO MASTER for the Amiga, with software that is designed from our top selling Amiga sampler AMAS and a package that gives you more extras than a M series BMW. By purchasing this state of the art product which combines a quality sampler with the expertise of over 10 years of software programming, you are purchasing a top quality product with the knowledge that it is not only compatible with existing Microdeal products but will also be with future ones.

What is Stereo Master

Stereo Master is a low cost, high quality sound sampler for the Amiga range of computers. The sampler cartridge included in this package plugs into the printer port at the rear of the computer and allows you to analyze the sounds coming in from devices such as Personal Cassette Players, Compact Disc Players etc, or change the way they sound using the Real Time Special Effects or record them. Once in the computer STEREO MASTERS unique editor will enable you to edit the sound in practically any way you can imagine. Once you have the sound sample how you want it, you may incorporate it into your own Demo's or use STEREO MASTERS own built in sample sequencer to play back the sample in sequence with other samples!



MAIN SCREEN

The Sampling Software

Every feature you would expect to find in a professional editing suite including;

* Real time record/play ghost markers
* Cut or Delete selected sample area
* Mix sample with full or half volume
* Shrink in by 25%/50%/75% by drag or wipe
* Fade in/out with selectable degree of fade
* Filter sample with soft/medium/hard filter
* Selectable trigger volumes
* Record frequency from 3.0 to 55.9 Khz
* Full editing and control facility for left/right channels
* Playback volumes
* Decrease volume
* Increase volume
* Bounce sample
* Paste sample
* Trigger recording
* Clear left/right samples
* Loop sample

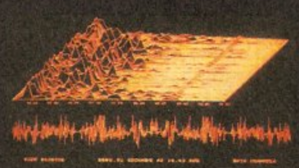


THE SPECIAL EFFECTS CONTROL PANEL

The Special Effects Software

For the first time ever you can emulate special sound effects in real time just like the sound labs can for film studios, normally the hardware to produce these effects would cost 100's of times more than this package. Features on the FX menu include;

* Built in real time special effects including Echo, Reverb, Ramp, Pitch up/down, Stereo bounce, Multi echo Chorus, Phaser, Reverse and Pitch bend.
* Fully programmable special effects so that customised effects can be recalled

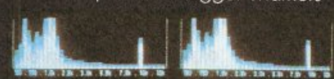


3D DISPLAY OF SAMPLE FREQUENCIES (FFT)

The Analytical Software

A whole host of pro-type analytical functions include;

* 3D display of sample frequencies (Fast fourier transform)
* 3D display also includes 2D envelope display plus sample information.
* Built in Stereo spectrum analyzer
* Stereo Oscilloscopes with trigger markers



STEREO SPECTRUM ANALYZERS



STEREO OSCILLOSCOPES



THE SEQUENCER CONTROL PANEL

The Sequencing Software

Our built in sample sequencer allows you to take up to 18 samples (memory permitting) and sequence them into your own "tronic" mixes, features on the sequencer include;

* Real time entry of sequences from keypad
* Step time entry of sequences
* 2 stereo channels for sequencing
* Storyboard style editing
* Digital sequence position display
* Fast forward/rewind controls
* Program sample to keypad
* Stand alone demo player displays IFF picture whilst playing sequence
* Sequence copy function
* Loop sample
* Selectable sequence speed
* Dump/re-edit function
* Test function
* 2 octave playback
* Insert/delete sample in step time

microdeal

Other innovative features

We know this product is years ahead of its time and these additional features justify our boast;

* New style stereo cartridge
* Produces stand alone executable sample files
* Fully multi tasking
* Saves in IFF/Raw/Instrument1/3/5 Octave
* Includes walkman type cable
* PAL/NTSC full screen display
* Can create workbench icons
* Save customised settings

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Talking Shop

Welcome to your letters page. Whether you want to offer your own advice to the big wide Amiga world or just fancy a good old gripe then this is the place to be read. Join your host, the editor Andy Storer, for some no-holds barred banter...



XMAS AMIGA CONSOLE

I've just seen the latest Commodore Amiga TV ad and I hope you're just as miffed about it as I am. I mean how are we ever to promote the Amiga as a serious machine when Commodore itself just goes on and on promoting it as a souped-up games console. It really bugs me because I seem to spend half of my time defending its credibility as a platform for serious work. Surely Commodore could have run an ad that also showed its potential in education and business – all we're left with now is another year of fending off criticism that it's just another Nintendo. It seems a very high price to pay in order to just sell a few more Amigas in the run-up to Xmas.

Stephen Daniels
Anstey
Leicester

Unfortunately, during the run-up to Xmas, it's games that sell machines. At any rate, given the amount of money a TV ad campaign costs you should probably forgive Commodore for spending its money on what is best guaranteed to deliver the most money back. I take your point but let's face it – the Amiga ***is***, among other things, the best games machine so why not flaunt it as such during Saturday morning and early evening TV hours?

However, all is not doom and gloom Stephen. If you check the accompanying press advertising campaign I think you'll agree this is much more wide-ranging and more than makes up for the gamesy image promoted on TV.

THE 1500 PLUS?

Could you please tell me whether Commodore has any plans to upgrade the Amiga 1500 to the new 'Plus' tech spec? I've heard that it might be in February but someone who thinks they're in the know reckons Commodore plans to cease production of both the 1500 and 2000 in the new year. What is the real story?

Karl Taylor
Leatherhead
Surrey

We haven't been able to secure a definitive statement from Commodore on this one so we can only speculate as to what the future holds for the 1500/2000 machines. In the short-term it does seem more than likely that there's one or two dealers out there right now just dying to be the first on the block to offer 'Plus' spec upgrades to 1500/2000 owners.

In the long term though my own guess is that Commdore will cease to produce the machines and instead bring out a Motorola 68020 machine in a 3000 box to fill the gap.

My spies tell me there is another Amiga in the pipeline anyway with HAM-E type graphics and an upgraded sound chip so this could be it.

RISCY AMIGAS

Have you any further information on the RISC Amiga story that surfaced recently? I think using an ARM 3 in an A500 would be an absolutely wonderful idea, the 68040 proved that CISC can be every bit as fast as RISC chips, but RISC's use less silicon and are much easier to design and are therefore cheaper. The ARM chip in particular is one of the smallest CPU's on the market and has therefore had time to evolve before becoming prohibitively expensive. The mainstream business micros will be using RISC processors within the next 2-3 years and will leave the Amiga behind unless something is done.

Do you think Commodore would sell the 5 disk version of Workbench 2.04 to non A3000 users? I know 2.0 works on my own machine (A1000 + A590) as I have tried it. It makes one hell of a difference from 1.3, it's as if you are using a new machine, but I can't install a ROM without forking out a sum of money which is currently beyond me. Besides, it will run faster out of 80nS fast RAM than a ROM chip.

N Blachford
Bangor

As far as a RISC-based A500 is concerned I think we're talking 'vapourware' here. An ARM3 processor would, of course, be a real boon to the serious Amiga user but I can't see it emerging as a new Commodore CPU. What we're more likely to see over the next few years, I suspect, are optional upgrade cards bringing ever-enhanced speed, graphics and sound. Whether a RISC will be made available remains to be seen. It'd be nice though.

The 5 disk version of Workbench 2.04 you refer to was released solely for developers and, as such, will never, legally, make its way onto the market. In any case users would need a half Meg of RAM to run just the new *Kickstart* never mind Workbench. I guess you should just start saving up the pennies – 8000 of them should suffice.

HOW TO BUY AN ULTRA-CHEAP COLOUR SCANNER?

I consider myself to be a bit of a DTP freak, but I still don't have any sort of digitiser or scanner. So when I was looking through the ads, I found the Sharp colour scanner – only problem is, I don't have £600 spare. Then I had this amazing idea. You know that some video digitisers have a colour wheel with 3 different coloured acetates to separate the picture into RGB. Well, would it be possible to place a sheet of red, green and then blue acetate under a normal black and white scanner and then combine them to form a full colour picture, after scanning the picture 3 times each with a different colour acetate then finally changing the colour palette to match each acetate?

Could you tell me if you think this would work or not. Any other thoughts or ideas would be most welcome.

D Buckle
Amesbury
Wilts

I'm all for ingenious money-saving ideas and this one does have some potential. There's a couple of points you should bear in mind though. The filters you refer to only work with a light source shining through them so a hand-held scanner wouldn't work unless you were running it over a light box and the material to be scanned was transparent! A flat-bed scanner would get round this problem neatly though as it provides its own light source so it would simply be a question of laying the acetate under the image to be scanned.

But then perhaps you're looking at the problem from the wrong angle. Wouldn't it be just as cheap to buy a colour digitiser of the kind you describe and then simply convert the image file formats to your DTP file input format? I suppose it depends on the resolution you're after.

If you want anything half decent then a mono flatbed scanner is your best bet – but you'd still be best to experiment with one before you forked out the readies. Are there any other readers who've tried any of these methods and succeeded?

LET US PRAISE

In March this year I got myself an Amiga 500, being honest I am no spring chicken and understanding

all the technical jargon is way beyond my brain power.

I have a collection of various computer mags, purchased over the past months all, might I add, packed with ideas of how to play games, (not my cup of tea). What a waste of money.

But in August I found the answer your *Amiga Shopper*. First the price put me off, 99p, also I presumed it would be full of ads, like all the others at thrice the price. So you can imagine how PLEASED I was finding subjects covered in understandable English, how things work and how to get them to work.

It's the best quid's worth of information for me! My subscription is on its way to Somerton for 12 months and back issues. So please keep up the standard for us LEARNERS.

J J Gill
Wigan

It's great to hear you're well and truly chuffed JJ and you'll be pleased to know I intend to bear learners such as you very much in mind. This year I'm planning a whole series of tutorials for beginners and advanced users alike so stay tuned.

SMART AMIGA FAX

I'd like to comment on R Brady's letter in issue 7. In it he states his wishes for a "Smart" fax system for the Amiga. Well, there already EXISTS one! (at least in the USA and here). Click-FAX from BLACK BELT Systems: $450. It supports sending and receiving FAX docs up to 9600 baud with 10 or 20 compression. The Modem capability supports 300, 1200 and 2400 baud with MNP level 3, 4 & 5. You can access all BBS, Networks or other without any changes. It can read ASCII text – IFF graphs and compressed FAXES from the AE "sendfax" or itself. Everything is available from your Workbench, CLI or SHELL or via AREXX, Script or MACRO. The system includes modem, cables and support software.

This should take care of R's demands. As for his "Smart Mains Box", I think that a small RAM 'disc' inside the modem is a better solution, although it would only work as a storage for received material. I mean would you want your system to be open to anyone? Of course, if you're running a BBS you would need your system "LIVE" at all times anyway.

F Njardvik
Reykjavik
Iceland

It's good to hear we have such informative readers in Iceland but we had a little trouble tracking down the number for BLACK BELT until we remembered it's the same company that produces HAM-E so the number's 0101 406 367 5513.

BIG BLUE AMIGAS

In issue 7 of *Amiga Shopper* many letters were printed from students saying the Amiga is non-compatible with PCs.

I am currently on a HND Computing course at Nottingham Poly and nearly always use the PC Emulator software, on which I can document all my assignments, then print them out in Poly.

My friend bought a PC Bridgeboard with a student loan and is able to use PC software.

If a student wants to do programming from home, etc, then what's the point 'cause they'll have to buy the Amiga version of the programming language, which is usually too much for us students.

S Eastop
Nottingham

At the recent World of Commodore Show I had an opportunity to use KCS's PC board which, for £220, turns your Amiga into a 11Mhz PC. Although screen refreshes are a little slow on graphics intensive programs like *Windows 3*, all the other 'straight' PC stuff ran admirably fast. Since you can even DOS-partition your hard disk, it would seem PC incompatibility is a thing of the past – I'd have thought £220 would be a well spent slice of your grant.

A COMMODORE KCS?

Commodore could open up markets into Higher Education by producing an up-grade such as the one advertised in the Nov '91 edition manufactured by K.C.S., but at £220 it is not so attractive.

Commodore surely could produce such an article at a far more competitve price!

D Stokes
Camberley

It probably could but at the same time it might think this would impinge on its attempts to maintain sales of its Commodore PCs!

SAFER SHOPPING

The advice you offer in the SAFE SHOPPING column contains much good sense, but doesn't go far enough!

After ordering software by mail order (NOT, I hasten to add, from an *Amiga Shopper* advertiser) the company went bust before sending the goods, but not before debiting my Access Account for £39.99. After a number of fruitless letters to the company, the reply to my claim for refund from Access reads:

"As the amount is below £100.01, I cannot take action under the Consumer Credit Legislation. So, I suggest that you try to resolve the matter directly with the retailer concerned".

I think your readers should know this.

R G Luxton
Solihull

I'd never actually heard of this £100.01 threshold and it does seem unfair. I phoned Access on your behalf and it pointed out that this threshold only applies to cases where a liquidation is involved. Access suggests you get in touch with the liquidators of the company. In cases other than liquidation, there are no limits on the amount in question.

However, where there's a dispute over the quality of an item you've bought, Access wouldn't act immediately, suggesting you contact your local Citizens' Advice Bureau first. Still, buying by credit card remains the safest way of trading by mail order.

WHY NOT JUST GET EVERYTHING OFF YOUR CHEST IN ONE GO?

Would you, in your reviews of hardware, state how many ports a product interferes with? I say this as I find the ROMBO unit a pain. I have to slide forward the A500 + A590 pair (with care as the connection is not solid) unplug my printer and serial lead as it blocks both ports and it also uses the disc port as well. I also find having the controls to adjust it on the back a nuisance, as how are you supposed to read them? This sort of information is, I think, of as much value as how well the product performs. I have written to Rombo asking what I need to make their unit sit on top of the Amiga with the controls facing me. This was in February, I have not received a reply.

If an add-on is going to use the parallel or Centronics port they should assume that a printer is already connected as that is what it's there for. Surely it must be possible to build a software controlled switch that controls a through-port, that way you do not damage the port's connections by plugging in and out the various units that cannot co-exist in the same port. The same applies to all other ports/edge connectors on a computer.

While on displays! When is the Amiga going to catch-up with Television Resolution, i.e, the display should be at least 600 x 800. The basic resolution of SPECTRUM is out of date on a modern computer. Monitors are now available with 2048 x 2048 resolution and 17.75 million colour shades, the 4K colour shades are fine but the resolution is way behind.

I find your magazine very good, at a reasonable price. Just one criticism – I read the DTP section and this has been a review in some issues. It should be tips and how to use – not a review, I believe it should be the different methods (where there are differences), between various hardware/software options. Some people have the best, others what they can afford; they all want to achieve the best with what they have.

Finally, WHY has no one produced a card cage for the A500? The expansion trap is not a Pandora's box, the real answer is a "Hold-All" to take the standard cards, CBM and/or IBM then you would see the little wonder fly!

L E Jefferies
Swindon

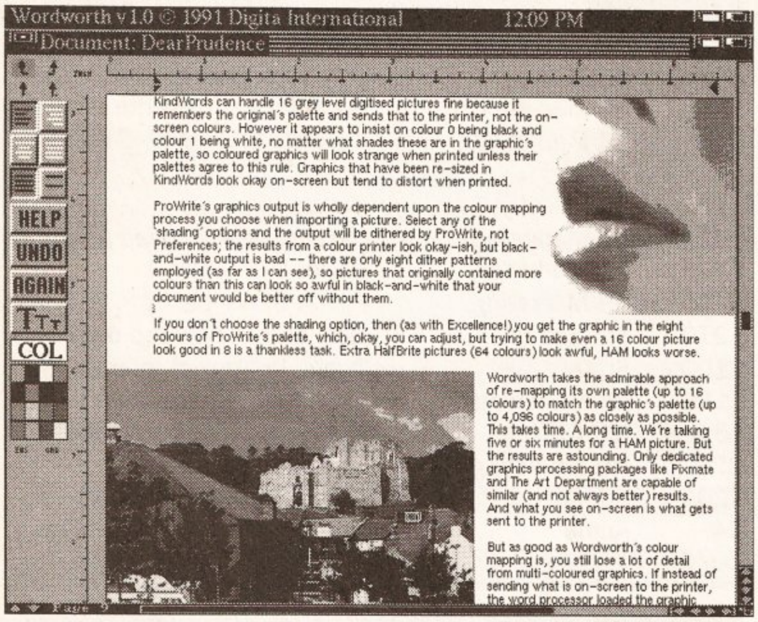
I take your point about add-ons – it's a drag having to plug in and out various devices. Whether the peripheral supplier should build in a thru connector is a moot point though. The simpler solution is to buy yourself a switcher box. Any electronics supplier should stock these for about £15 for a two-way parallel or serial switcher and £20 for a 5-way device.

Moving on to resolutions – the easy answer is that the new ECS found in the 500P supports the new SuperHires resolution – albeit with a rather strange 1280 x 512 interlaced display. What you must remember is that resolution costs money. Retrieving 2048 x 2048 pixels with 17.5 million colour shades every cycle would require dauntingly powerful memory chips. Only custom graphics workstations can do that at present and you know how much they cost. Regarding DTP reviews – I think you're right. As the new editor I want to look much more at the functionality of programs. How to choose an application for your needs and then get the most out of it is what the game is about.

Somebody out there please produce a card cage. You'd make a mint.

All the hard-hitting facts about software

Mark Smiddy's no nonsense New Year guide to every Amiga product you're likely to need.



***Wordworth* enables you to produce professional-looking documents. A cut above ordinary WPs, and streets ahead of the humble typewriter.**

PRODUCTIVITY

Productivity software is an all-encompassing term surrounding a variety of software, from the sublime to the ridiculous and is aimed mainly at business and serious home users. It covers anything from word processors, through databases and spreadsheets, to home accountancy packages. The four major categories are as follows:

Word processing software is designed to help you make the most of your writing skills, and in some cases enhance them. In their simplest (and cheapest) form, word processors allow you to enter, edit and format text before finally committing to paper. This is a great improvement over the humble typewriter, because you get the chance to review and correct the text – without the need for voluminous amounts of correction fluid.



"These days you're faced with a vast array of products on the shelves for the Amiga. Here's hoping that this column will give you a better idea of what's currently available."
Mark Smiddy

Better word processors will include a variety of tools with such features as spelling checkers, thesauruses and mail merging — so you can easily send the same letter to several people. One word processor even has its very own database!

As cost and power increase, you get into the realms of document publishers – sometimes confusingly called word publishers. These are just very precise word processors with the capability of importing graphics and processing text, often containing a variety of styles and type-faces. Such things are a bridge between simple word processors and full-blown typesetting systems – and are usually more than adequate for casual use such as newsletters and so on. *Amiga Shopper* carried out a major Supertest of word processors in issue 6.

Databases are, in computer terms a fairly recent innovation – but many users would be lost without them. The world without databases would be a world without direct (junk) mail: ah, bliss.

Typically, databases hold information; any information can be stored – whether it be a list of names and addresses, twenty years of football league results or population statistics.

Simple (flat-file) databases will allow you to store simple data and retrieve or print it in list form. Normally some form of search facility is provided to locate data easily.

continued on page 16

	Price	Supplier	Notes
Word and document processors			
Scribble	£30	HB Marketing	Crude but simple WP
Transwrite	£50	HB Marketing	Fast and efficient WP
Pen Pal	£80	Harwoods	DP with internal database!
Kind Words 2	£50	HB Marketing	Early DP – slooooow...
Excellence	£130	HB Marketing	DP with loads of features
Protext 4.2	£100	Arnor	Standard text machine (WP)
Protext 5.5	£155	Arnor	Adds thesaurus, RTF etc.
Wordworth	£130	Digita	Highly acclaimed new DP
Note: DP = Document processor, WP = Word processor			
Database packages			
Infofile	£50	HB Marketing	
Prodata	£100	Arnor	Sister to *Protext* – slow
Superbase Personal	£30	Precision Software	Cheap and powerful
Superbase Personal 2	£100	Precision Software	Very Powerful...
Superbase Professional 4	£412	Precision Software	Most powerful around
Spreadsheets			
Superplan	£80	Precision Software	Powerful but slow
Analyse	£50	Precision Software	Cheap and easy!
Maxiplan 500	NA	Commodore	Powerful, if bugged
Advantage 1.1	£100	Precision Software	Highly acclaimed
K-Spread 3	£70	Kuma	GEM lookalike
K-Spread 4	£100	Kuma	Powerful but ugly

continued from page 15

In any case, they certainly beat file cards! The more powerful systems allow data to be stored and accessed in an increasing number of complex ways.

Relational systems allow one set of data to access other sets of data automatically, updating links as they go. This might be used to hold a list of the products offered by different suppliers. One set of data – the addresses — remains fairly static. The other may be in constant flux; and, in any case, each supplier could have hundreds of different items. Using a relational system, the data can be cross-referenced (item to supplier) quickly, easily and without having to store the same details many times over.

Spreadsheets are mathematical toys; open-ended applications intended to allow the end-user to define their own application. If that sounds a little mind-boggling, then just consider that many spreadsheets can double up as accounts systems, databases and even word processors. Spreadsheets are not for everyone – because unless you have some idea of what you want from them, they're just about as useful as chocolate fireguards!

Every blank spreadsheet is a program waiting to be written. Each cell – many sheets have thousands – is like a powerful pocket calculator in its own right. Now imagine being able to connect all the results together and compile results or draw tables. Many sheets can run programs either automatically on starting up or by user action.

Spreadsheets can be used for almost any application which requires handling large numbers of figures, from cashflows and profit-and-loss projections to statistical analysis and forecasting. Without a doubt, the spreadsheet is one of the most fascinating and useful of all the productivity software. But that power comes at a price – ease-of-use, which is why the *Amiga Shopper* business section is carrying an introduction to them which began last month.

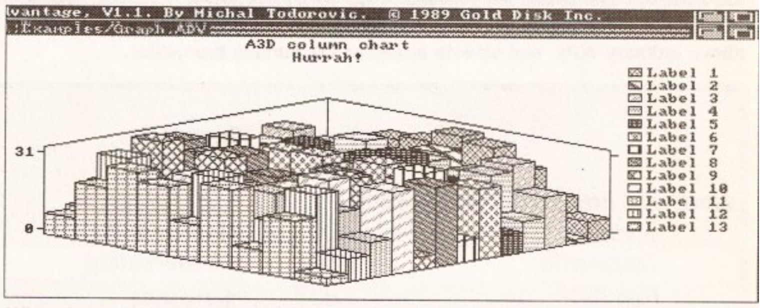
Integrated packages are bundles of useful software available for less than the cost of buying each package separately. Typically, they will include a database, spreadsheet and word processor – but they may have others not available elsewhere. Gold Disk's *Office* includes *Page Setter*, for instance.

The advantage of integrated systems is that the software involved can swap data easily. This makes laborious tasks such as mail-merging much easier. On the down side, you will find that some applications are not as good as others. *Analyse* for instance, is a perfectly capable spreadsheet in The *Works Platinum* pack, but it is let down somewhat by the *Scribble* word processor. In any event, integrated systems can be a very good starting point, either for those on a tight budget or folk who do not know which applications they require.

Financial systems are tailor-made for home users and small businesses to help them keep track of the tricky side of business –

continued on page 18

	Price	Supplier	Notes
Financial			
Cashbook Controller	£50	Digita	For small business use
Home Accounts	£30	Digita	Ideal toy for big spenders
System 3	£50	Digita	Stock control/invoicing
System 3 Enhanced	£70	Digita	Bigger version System 3
Personal Finance Mngr	£30	Michtron	Rival to *Cashbook Controller*
Personal Tax Planner	£40	Digita	Keep the taxman happy
Final Accounts	£30	Digita	P&L, A/C ratios etc
Integrated Systems			
Publisher's Choice	NA	SDL	WP, Spreadsheet, database
Gold Disk Office	£130	HB Marketing	Advantage, transwrite etc
The Works Platinum	£90	HB Marketing	*Scribble 2, Analyse 2* etc
DTP Software and Sundries			
Page Setter 2	£62	HB Marketing	Basic system,stripped *Pro Page*
Page Stream 2.1	£205	HB Marketing	Power DTP – part 1
Pro Page 2.0	£130	HB Marketing	Power DTP – part 2
Saxon Publisher	£270	Surface UK	New entry – new top dog?
Saxon Script	£100	Surface UK	Adobe Postscript interpreter
Outline Fonts	£135	HB Marketing	Extra fonts for *Pro Page*
Pictureware	£5 each	Nic Williams	Library of digitised photos
Pro Clips	£25	HB Marketing	Selection of clip art
Clip Art Library	£20	Kuma	40 pics per disc + index
Clip Art Sampler	£4	Kuma	Illustrated index + free disc



When it comes to handling cash, you could do no better than to buy a sophisticated spreadsheet such as *Advantage 1.1*.

	Price	Supplier	Notes
Music Packages			
Bars and Pipes	£170	Various	Amazing MIDI sequencer
Dr T's Tiger Cub	£100	Various	Nice beginners' system
Sonix	£NA	Various	Oldie but good – notational
Quartet	£50	Microdeal	4-channel tracker
MED 3.1	Free	PD Libraries	4-channel tracker + MIDI
OctaMED 2	£20	Amiganuts	MED with musical notation

Educational Products	Price	Age	Topic	Supplier
Fun School	£25	all ages	Various	Europress
Play and Read	£25	primary	English	Prisma
Hooray for Henrietta	£25	primary	Maths	Scetlander
Answer Back Quiz	£20	all ages	Various	Kosmos
Donald's Alphabet Chase	£25	pre-school	English	Ent. Int.
Puzzle Book	£20	all ages	Various	Soft Stuff

	Price	Supplier	Notes
Amiga Painting Systems			
Deluxe Paint 4	£90	Electronic Arts	Latest – includes HAM
Photon Paint 2	£90	Software Business	Powerful HAM package
Deluxe Photolab	£130	Electronic Arts	Image manipulator
Spectracolour	£70	HB Marketing	Rival to *Photon Paint*?
Digi-Paint 3	£70	HB Marketing	Power HAM-based system
My Paint	£20	HB Marketing	Simple and cheap!
Sculpt animate series	£130+	Amiga Centre Scot.	Range of 3D packages
Draw 4D	POA	Surface UK	Another 3D+ system?
Turbo Silver	£145	Precision	3D rendering engine
HAM-E	£400	Checkmate	24-bit colour system
VistaPro	£100	HB Marketing	Fractal landscape machine
PIXmate	£40	Amiga Centre Scot.	Advanced image processor
Titling Systems			
Scala	£250	Silica Systems	One of the best around
Broadcast Titler 2	£235	Amiga Centre Scot.	Awkward but powerful
Home Titler	£40	HB Marketing	Basic titler
Pro Titler	£150	HB Marketing	Powerful titling system
ZVP Video Studio	£100	Various suppliers	Video production aids

continued from page 16

figures. These programs cover a variety of topics from stock control and invoicing through VAT and tax returns. One point worth mentioning here is that if you are using a computer to calculate VAT or income tax for a business then you must inform the relevant government department. Although the better database spreadsheets can be programmed to do most of the functions covered here, in many cases a custom application will do it better.

By the way, if you need a VAT package, make sure that it has been approved by HM Customs and Excise before you start using it. If not, you could find yourself in hot water.

DTP

There are currently only 2 widely used DTP packages for the Amiga – although some of the more powerful word processors offer at least some DTP facilities. Of these two – *Page Stream 2.1* and *Pro Page 2.0* – each has its followers, but Gold Disk's *Pro Page* seems to be gaining ground in many circles. Certainly it's the preferred choice of our own DTP expert, Jeff Walker.

No doubt the battle between the two products will rage for some time yet. (Thanks to A-Max, those with money to burn could ignore these completely and buy the Macintosh program *Quark Xpress 3.0* – the very program used to produce this magazine!)

Although *Page Stream* and *Pro Page* are totally incompatible, both can take advantage of the variety of support products such as extra fonts and clip art – so no-one gets left out. We have also printed a list of some scanners – useful tools for anyone with more than a passing interest in DTP.



***Pictureware*: a whole library of digitised photos at your fingertips.**

MUSIC

The Amiga is as versatile in the area of music as it is in many others. Music systems fall into 2 major categories: trackers and notational composers. Trackers are simpler – each note is represented by a series of numbers: duration, frequency, volume, instrument and so on.

At first glance trackers look horrendously complex – but in truth they are very simple once mastered.

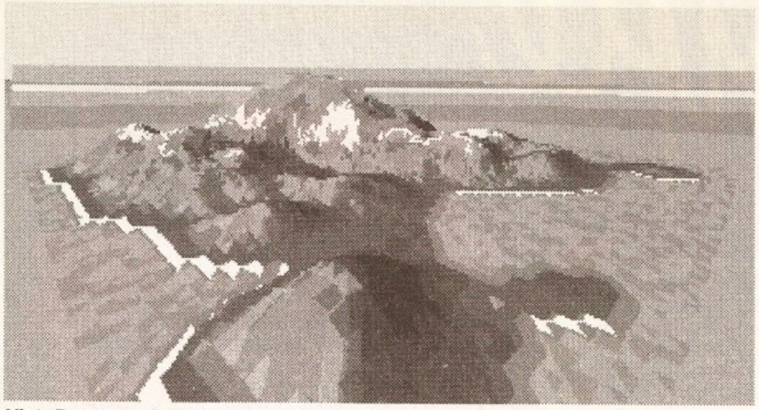
Conversely, notational composers are tools for accomplished musicians and anyone with a burning desire to learn music. Songs are composed on staves where each note is shown as it would be on real sheet music. Remember, though, that although most systems only play four channels at once, each note can be any instrument – so entire symphonies can be produced if you have the patience. Recent offerings like *OctaMED* can combine the two and play eight channels at once. And for the price, *OctaMED* is a great introduction.

Most Amiga systems incorporate a MIDI sequencer of some sort which can record and play up to sixteen channels on any number of different MIDI instruments. The operating limitations are determined by the hardware, of course, which usually has to be bought separately.

EDUCATION

The National Curriculum looms large on the horizon these days, and everyone wants the best for their kids. Schools have plenty of computers but the teachers simply

	Price	Supplier	Notes
Programming Languages			
GFA Basic	£50	GFA Datamedia	Powerful applications BASIC
Blitz Basic	£70	Siren Software	Fast games-tailored BASIC
AMOS Basic	£70	Europress Software	Popular and powerful BASIC
HiSoft Basic	£50	HiSoft	Easy to use, good compiler
RQ Forth	NA	HB Marketing	Awaiting release
Lattice C	£230	HiSoft	Widely used C compiler
Aztec C	£130	Precision Software	Popular C compiler
M2 Amiga	£125	Real Time Assoc	Modula 2 – Pascal follow-up
ArgAsm	£60	Argonaut Software	Fastest 68000 assem
Devpac II	£60	HiSoft	Most used 68000 assem
ARexx	Free	(with Workbench 2)	Automating language
CanDo	£130	Various	Applications generator
Pascal	£3	PD Libraries	Version of Wirth's 1st attempt
Smalltalk	£3	PD Libraries	Another weirdo



***VistaPro*, one of the many painting systems for the Amiga, helps you to form your own fantasy world by means of fractal design.**

don't have time to cope with a class full of kids and offer hands-on time as well. Your Amiga at home can fill the gap – and there is plenty of choice in the software field.

Pre-school kids probably have the widest range of software available since shape, matching and number games are the easiest to program. Closely following these are programs for primary ages with spelling, arithmetic and general cross-curricular topics such as direction-finding and computer appreciation. However, for seniors the range is rather more limited – again plenty of maths programs, but the choice is limited mainly to foreign language drillers and interactive atlases.

If you happen to fancy something for the whole family, there is a fair range available – from quizzes to brain-teasers. It should be added that some strategy games and shoot-em-ups appearing in the best-seller charts also have a good deal of educational content, with requirements of logical thought, map-making techniques and wheeler-dealing.

Whatever you choose, bear in mind that the age-groups quoted are very flexible. Younger children enjoy games intended for older ones and vice versa.

ART PACKAGES

(*AS* Supertest Issue 2)

There is little doubt that when it comes to graphics few systems can rival the Amiga's versatility. Although other systems may boast larger palettes and better resolutions, none come close at the price.
Furthermore, the Amiga's accepted standard graphics format, IFF, has meant a high degree of compatibility between art systems from a variety of developers. In effect, this means that the user with money to burn can use the best facilities from a range of different graphics tools without it being necessary to fiddle with an endless stream of conversion utilities.

Art packages are most often used for leisure purposes, but they can just as easily re-touch images from digitisers and frame grabbers. Software authors use them too, for developing everything from sprites to backdrops for graphical user interfaces.

Thanks to the power of the machine and the software quality, even children can become accomplished artists with the wide range of tools provided. *Photon Paint 2*, for instance, has a surface mapping feature. This enables pictures to be wrapped on to 3D shapes and more besides; *Digi-Paint 3* can colourise monochrome images; *Deluxe Paint 4* has advanced animation facilities and supports a wide range of screen modes too.

VIDEO

Right, so you've shot your video of the best man tripping over a drunken usher, cannoning into the bride who decimates the five-tier wedding cake and you want to add the odd caption or two before you send the whole thing off to Jeremy Beadle. Video titling has never been easier – all you need are two video recorders (one borrowed from next door perhaps), an Amiga, a genlock and the software to mix it all up.

Basic titles can be added with a bit of imagination and a good paint package – say *Deluxe Paint* – but, for those really fancy wipes, fades, blurs and that professional feel, custom-built software is the only solution.

Strangely enough, although there seems to be a large number of genlocks on sale the amount of software is surprisingly small. Don't let that put you off, however, because as always the quality is pretty good. Top of the league (for the moment) is *Scala*: 17 fonts, scrolling titles, 59 backgrounds, over 70 transitions and an animation player too – "yer gets what yer pays for". For occasional use, though, there's always *Home Titler*, while for the semi-pro with an interest in the technical side *ZVP Video Studio* produces a system tailored for professionals which has a selection of clocks and other video sundries.

LANGUAGES

(*AS* Supertest Issue 2)

In bygone days when 8-bits ruled the roost, one of the most popular leisure pursuits – rivalling games – was writing programs. In those days, virtually every home micro came with a version of the Basic language built into ROM. (One exception was the Jupiter Ace, which came with Forth instead.) Prior to that, Basic had to be booted from tape, a long and arduous process. Things have come a long way since then, but the 16-bits have returned to the old system where the machine comes fitted with a basic operating system and precious little else; Basic, once again, has gone back to mass-media – disk in this case.

All this might seem like a throwback, but it opens doors for a wide variety of other programming languages and even different versions of Basic. For accomplished and potential programmers alike this opens up new opportunities – from writing simple applications to vast new games, there is a language suitable.

Be cautious when it comes to reading the packaging and adverts though. Just as any programming language takes time to learn, any program takes time to write. It's no use getting Europress Software's AMOS Basic and expecting to write a best-seller in two weeks if you have no idea what *Print* means.

Most mainstream languages have a version in the public domain – so if you want to try something weird and wonderful, try there first.

WIDGETS

Typically these are the sort of little gadgets and stocking fillers you can ask your favourite auntie for when Christmas comes around. (Whoops, there I go, getting all commercial.)

There are literally dozens of gadgets and extras: replacement mice; optical mice; cordless mice and joysticks; mouse mats; external cases; keyboard protectors; fancy disk labels... and so it goes on. If you have a particularly rich auntie, you might even consider asking for a 24-bit graphics card. You'll find these goodies – and more – lurking among the advertisers' listings in this very magazine: we've listed a few to get you started.

THERE'S MORE?

Certainly. Much, much more. Most of the sections in this feature only contain a short list of possibilities and more are being released every day. *Amiga Shopper* will keep you up to date with the latest releases – helping you make an informed decision on what to buy. Happy shopping! AS

	Price	Supplier	Notes
Widgets			
A500 dust cover	£5	Various	Keep an A500 clean
Disk Boxes	£5-25	Various	Price depends on storage
Disk drive cleaners	£3-5	Various	Waste of time and money
Easyl	£270	Trilogic	An artist's dream digitiser
Fat Agnus	£50	Various	For 1Mb CHIP Ram early A500
Intro to Amiga	£11	Trilogic	VHS Helper Video
Monitor Plinth	£25-40	Various	Raise monitor height
Monitor Switchers	£20–30	Various	Monitor/TV sharer
Mouse House	£2	Various	Mouse holder
Mouse Mat	£3-5	Various	Stops mouse slip
Optical Mouse	£36	Golden Image	A mouse without a ball!
Roboshift	£30	Josty UK	Auto mouse switcher
The Brush	£40	Golden Image	'Pen' that works like a mouse
Trackerball	£50	Various	Mouse alternative
Virus Killers	£3	PD Libraries	An essential buy

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Stocking fillers

Cliff Ramshaw delves deep into his sack and pulls out a selection of Christmas crackers

Christmas shopping – children running pell mell down the High Street, their shoes crunching in fresh snow lit a warm orange by the street lamps, their faces aglow with an excitement that anticipates the warm fires they'll sit before while they wait for Santa Claus and dream of bright, noisy presents and succulent slices of turkey. And as you wander from shop to shop, avoiding their headlong charges and playful snowballs, while you stare bewildered at windows full of shiny, expensive gifts, you can't help thinking: what a drag.

Decisions, eh? Always difficult, especially in the cold. This is where *Amiga Shopper* comes in. We've asked a number of our regular columnists to make some suggestions for the ideal Christmas present for the discerning Amiga owner. And they all cost less than fifty quid.

FLETCHER VIDEO FONTS PACK 4

£15.00 inclusive from PD SOFT, 1 Bryant Avenue, Southend-On-Sea, Essex SS1 2YD ☎ 0702 466933/612259

There are loads of unique colour fonts on this 6 disk set, with potential uses in games, video, graphics, publishing, presentation and so on. Altogether there are 64 fonts on the disks, though there are only 37 typefaces – because some are simply different coloured or patterned variations of one face.

Nevertheless there's some interesting stuff here, especially the 16 colour fonts. If you want to get hold of some new fonts for your collection you could do a lot worse than this. It's a bit of a pot pourri, but there's bound to be a few that you'll find useful. Load them into your graphics program and have a look.

3D CONSTRUCTION KIT

£49.99 from Domark, Ferry House, 51-57 Lacy Road, Putney, London, SW15 1PR ☎ 081-780 2222

This program is based on the Freescape system developed by Incentive and used for its successful games across many formats such as *Driller* and *Castle Master*. Totally mouse driven, it allows you to create, resize and place shapes to build up a landscape. Then, with the help of a simple programming language, conditions are set up so the player can not only move in three dimensions through your landscape, but can interact with the objects they find. A very informative VHS video tape is included which takes the newcomer through the basic screen options in a step-by-step manner – makes the manual much easier to follow afterwards. Unlike many creators you don't need artistic ability to cope with this one – simply use the building blocks supplied to create your fantasy.

MOSTRA

£2 (Jamdisk #5) from JAM, 75 Greatfields Drive, Uxbridge UB8 3QN ☎ 0895 274449

Picture viewers do have a hard time of it. There they all are, jumping through all sorts of flaming hoops in order to display a picture, and the picture gets all the attention and praise. It's a small wonder that they sometimes get the hump and crash the computer. Wouldn't you?

Sebastiano Vigna's shareware picture viewer, *Mostra*, immediately grabs your attention by trying (and almost succeeding) to be all things to all people. It will display *any* IFF ILBM picture of *any* size, plus SHAM, Dynamic HAM and Dynamic Hi-Res, although it calls NewTek's freeware *Dyna-Show* program to display the last two types. If any picture is too big to display on the screen (including SHAM!) you can scroll around it by using the arrow keys. It's been tried up to 5,120 by 4,096 pixels by the author, which is 10 hi-res screens wide by 6 hi-res screens high.

If this was all *Mostra* did, then it wouldn't be much to shout about. But it has a host of arguments that can be used on the command line or in the Tool Types gadget of its icon's info requester.

Small pictures (brushes, for example) can be forced into the centre of the display, colour cycling can be turned on, flags can be set so that all pictures in a specified directory are displayed one after the other, a delay value can be specified and you have the choice of four speeds of fade-in plus double buffering so that one picture loads while another is being displayed, and then the second instantly replaces the first.

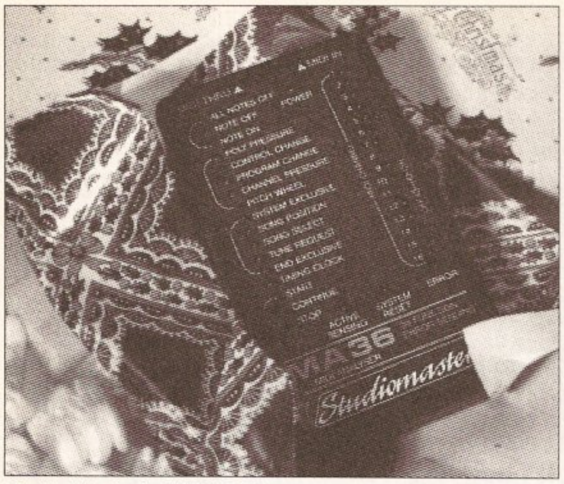
The mouse pointer can be hidden and the keyboard can be locked-out so that you can leave your slideshow unattended without the danger of a spotty oik messing it up by poking the space bar.

You can even save on graphics memory by specifying a zero-bitplane, no colour Workbench for the duration of the slideshow. I kid you not.

These are just a few examples, there are a dozen more features that



"This guide is specifically designed with the aim of leaving you more time to enjoy all those festive activities."
Cliff Ramshaw



Studio Master's MA36 MIDI Analyser is ideal for gaining information on the notes you play on your keyboard

make *Mostra* probably the most versatile Amiga picture viewer available. Whoops, almost forgot to mention that *Mostra* uses arp.library for its file requester, and it won't work without it.

SOUND ENHANCER

£34.95 from Omega Projects, 14 Derwent Close, Culcheth, Warrington, WA3 5DY
☎ 0925 763946

The Amiga's sound capabilities tend to outstrip the reproduction facilities of most televisions and monitors. One method of overcoming this is to hook things up to your hi-fi, but a much neater and easier method is the Sound Enhancer. Consisting of a box measuring around 3"x 2"x 1" together with a through-connector for the serial port and a couple of audio sockets, it is a device which produces an unbelievable difference in output. Without any amplification it cleans up the sound quality to the extent that you'd swear the Amiga was playing via an expensive hi-fi. When switched off again it feels like having cotton wool plugs in your ears, even with a 1084S. Ideal for music enthusiasts and games freaks.

THE MA36 MIDI ANALYSER

£43 from StudioMaster, Unit 5a, Studio Master House, Chaul End Lane, Luton, Beds, LU4 8EZ
☎ 0582 494341

Come Christmas morning when you have trouble setting up your new MIDI gear you might be glad that someone thought to buy you a StudioMaster MA36 MIDI Analyser. It's about the same size as a guitar tuner, has an on/off switch, can be battery or mains-adapter powered and has two MIDI sockets, namely MIDI IN and MIDI THRU. The MA36 reads MIDI data as it passes through the unit, identifies it, and then displays the results on a set of LED's situated on a front-panel display. To use it you just plug the MA36 into the MIDI line and look at it – it really is as simple as that.

The right hand side of the MA36 display is a bank of channel indicators. These enable you to tell immediately which MIDI channels are being used. As you play notes on a keyboard, the left hand side of the display bursts into life displaying details of what messages are being received by, or are passing through, the MA36 analyser. There's an 'All Notes Off' indicator which identifies a special MIDI message used as a 'panic button' message, and of course all of the usual note-on/note-off messages are detected. Polyphonic pressure (ie real polyphonic aftertouch) and control change messages are detected and program change messages haven't been left out either.

THE FT3 PATCH COMMANDER

£39.95 (plus £2 P&P) from ForeFront Technology, 2 Rebecca Gardens, Silver End, Witham, Essex, CM8 3SR ☎ 0376 83920

A useful addition to the MIDI maestro's arsenal is a portable unit which can generate MIDI messages and here ForeFront Technology's FT3 Patch Commander makes a good choice. It is a hand held, battery powered unit intended for use as a general MIDI remote controller and it has 9 different modes of operation.

The FT3 will function as a patch command transmitter which can transmit a patch message on any (or all) MIDI channels. In addition to this, 8 such settings can be stored so that they can be recalled using a single keypress (this data is retained when the unit is switched off). There are system and channel filter modes which enable you to filter unwanted MIDI messages from your MIDI data and you can even use the FT3 to switch running status on or off (data sent using running status can therefore have the status bytes re-inserted into the MIDI stream). The FT3 also includes a MIDI clock generator *and* a MIDI lead tester – it's a handy gadget to have around.

MIDI INTERFACE

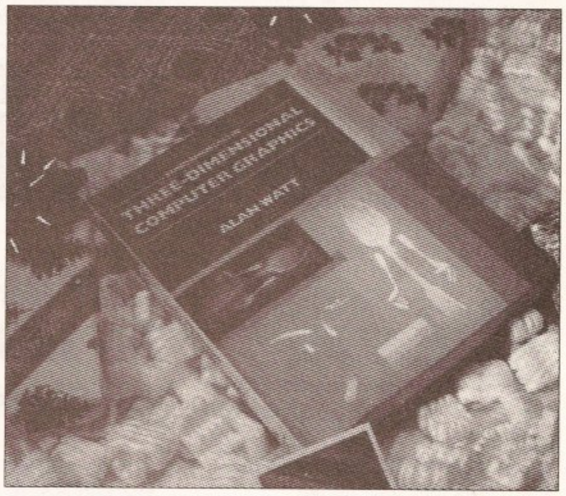
£19.95 from Omega Projects
☎ 0925 763946

Don't forget that anyone wanting to use the Amiga for MIDI applications is *definitely* going to need a MIDI interface. You'll find quite an array of these at your local Amiga dealers and in the magazine adverts. A MIDI interface for an Amiga is quite a simple affair which plugs into the Amiga's serial port. Its basic purpose is to provide suitable signal characteristics, the signal opto-isolation and most important of all... the right physical connections (ie a MIDI-IN, a MIDI-OUT and usually a MIDI-THRU DIN connector).



The FT3 Patch Commander is a useful gadget to have at hand. It's total MIDI control in the palm of your hand

Omega Projects supply a useful A500/A2000 interface which is built into a D connector. It plugs into the Amiga's serial port, comes complete with two leads which can plug directly into the MIDI gear and contains LED indicators which flash when MIDI data is being transmitted or received. The LED indicators are by no means essential but since they can help with fault-finding they are always a useful extra to have.



For the more mathematically minded amonst you, *Three Dimensional Computer Graphics* is a mine of information

FUNDAMENTALS OF THREE-DIMENSIONAL COMPUTER GRAPHICS

by Alan Watt
£22.95 from Addison Wesley
ISBN 0 201 15442 0

If you need to know more about underlying concepts and algorithms in use in graphics programming this is one of the best books available. It covers basic 3D theory, reflection, shading, rendering (including hidden surface removal), ray tracing, animation and more. Some mathematical background, mainly a knowledge of matrix notation, is assumed, but on the whole this book is very readable. The examples are excellent (algorithms are mostly in Pascal or Pascal-ish pseudocode) with superb colour illustrations.

PAGESETTER II

by Gold Disk
£39.99 from Softstore, 410 Bath Road, Slough SL1 6JA
☎ 0628 668320.

Point out at any sub-£50 DTP package for any make of computer and you'll get the same reaction every time: 'Can't be much cop for that price.'

The first version of *PageSetter* wasn't worth a pair of marinated dingo's kidneys. I mean it was terrible. Very close to useless in fact. And because it is still sold in some cheap 'home office' bundles word of mouth has got around that *PageSetter* is not all it's cracked up to be.

But *PageSetter II* is different, literally different, bearing no relation at all to that early version. It's basically a cut-down version of *Professional Page 1.3*; the only important things missing are colour, PostScript output and the ability to rotate text and graphics.

Recently a distributor asked me to use *PageSetter II* to produce an A4 leaflet to promote *PageSetter II*. Using a variety of structured clip art, IFF scans, Compugraphic fonts (yes, PSII supports CG fonts and comes with two of them!) and a bitmapped font, it took me 30 minutes to produce a leaflet that couldn't have been done any better with *PPage*, *PageStream* or *Saxon Publisher*.

If you want to get into desktop publishing, at under £50 *PageSetter II* is the perfect introduction.

TRANSWRITE 2.0

by Gold Disk
£29.99 from Softstore, 410 Bath Road, Slough SL1 6JA ☎ 0628 668320

The *TransWrite* word processor suffers from the same misconception people have about *PageSetter II* – that is, it can't be any good if it costs so little.

Well, it depends what you want to do with a word processor. If you want to import and print graphics, *TransWrite* won't be a lot of help to you. If you want WYSIWYG displays and multiple fonts and pretty colours, *TransWrite* will be a poor choice of word processor.

But if you want no more than a lightning quick word processor with a spelling checker – what the groovy crowd is referring to as a 'text engine' – then *TransWrite* is amazing value at its recommended retail price, let alone the sub-£30 price tags I've seen in mail order adverts and the stunningly low £10 I've seen it going for at computer shows.

And don't write off *TransWrite* if you want to create neat black-and-white documents that include graphics. Instead of rushing out to buy one of the graphics-based word processors like *Excellence!*, *ProWrite* or *Wordworth*, you should seriously consider buying *TransWrite* and *PageSetter II* instead – write your words with *TransWrite* and import them into *PageSetter II* to get top quality Compugraphic font output at the highest resolution your printer can manage.

THE IMAGINE COMPANION

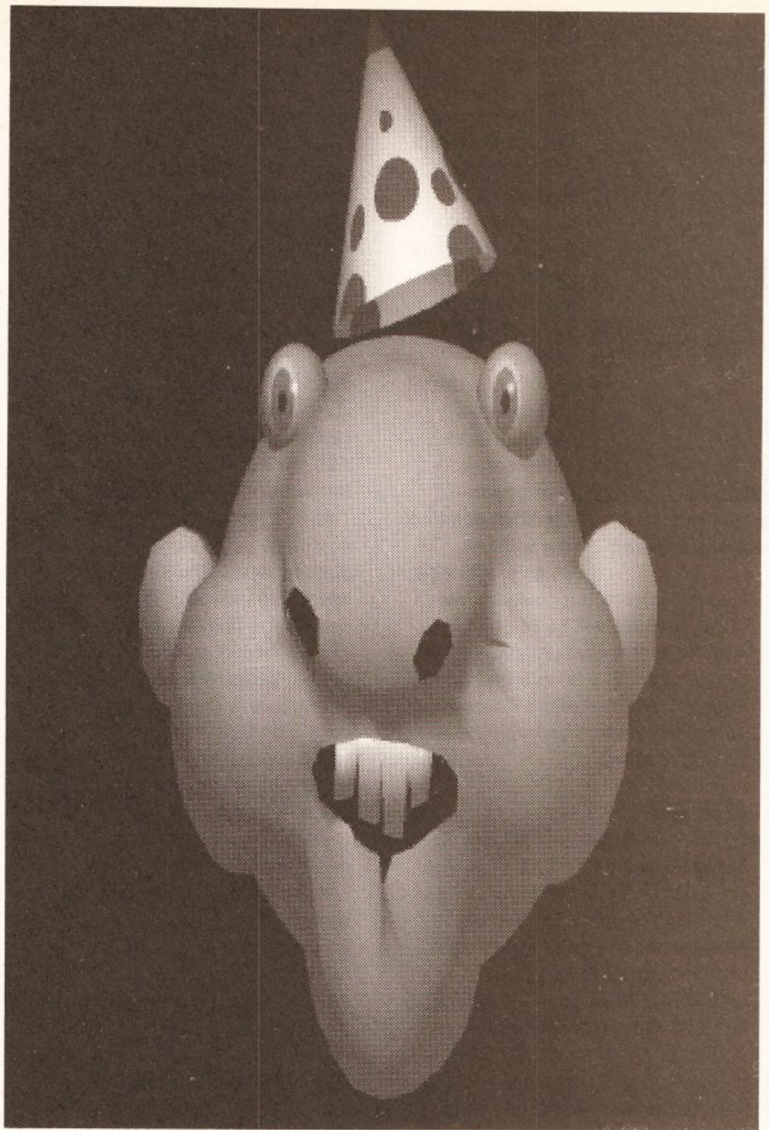
by David Duberman
£20.00, inclusive, from Motion Blur Publishers. Available in this country from Alternative Image, 6 Lothair Road, Aylestone, Leicester, LE2 7QB ☎ 0533 440041.

From the aptly named Motion Blur Publishing company comes this softback book of hints, tips and tutorials for users of Impulse's *Imagine* 3D animation program, which can often be rather difficult to use but which can produce stunning ray-traced results.

Though the book is far more understandable and useful than the program's manuals there are still some gaping holes. For example, *Imagine*'s Forms Editor, which I think is rather difficult to understand and ought to have been better explained here, is very quickly glossed over.

But for seasoned *Imagine* users there are some flashes of inspiration within the covers of this welcome book and its accompanying disk.

While the *Imagine Companion* certainly doesn't answer all the questions you'll have if you use *Imagine* regularly, it will probably make you think about dusting off your copy if you'd just plain given it up as something you would never get to grips with. And any help for *Imagine* users is welcome.



Creating such startling faces could become second nature if you grab yourself a copy of the essential *Imagine Companion*!

DESIGN FOR DESKTOP PUBLISHING

by John Miles
£12.95 from Computer Manuals, 30 Lincoln Road, Olton, Birmingham B27 6PA ☎ 021-706 6000

Desktop publishing is all about design. It's the not the size of the package, it's what you do with it!

To the fortunate few, design comes naturally, the rest of us have to learn it. Obviously the best way to learn is to take a course at night school or college, but if you don't have the time or the money for that, the next best thing is to read a book on the subject and put the advice within that book into practice.

There are stacks of books on desktop publishing, but I've yet to come across a better one for the neo-publisher than *Design For Desktop Publishing* by John Miles. It's written in an entertaining and easy to understand style, there are hundreds of examples to guide you, and every page contains at least one piece of classic design advice.

It's a front-to-back book – by that I mean that you must start at page one and read the rest of them in strict numerical order. The first section is called 'Before you start' and talks about identifying what the document is intended for and how the reader is going to use it. From there we move through typefaces and typesetting, page grids and layout, word and passage emphasis, title pages, using illustrations, cover design, colour, binding, paper, reproduction, planning ahead... concluding with a discussion on establishing a 'house style' and correcting copy.

It's a big statement that will have some purists screaming down my neck, but I say that this book is the only DTP design guide you'll ever need.

SUPERDUPER

£2 (Jamdisk #3) from: JAM, 75 Greatfields Drive, Uxbridge UB8 3QN ☎ 0895 274449

Forget Diskcopy and all those other AmigaDOS floppy duplicating commands and utilities, get hold of Sebastiano Vigna's deeply wonderful and shareware *SuperDuper.*

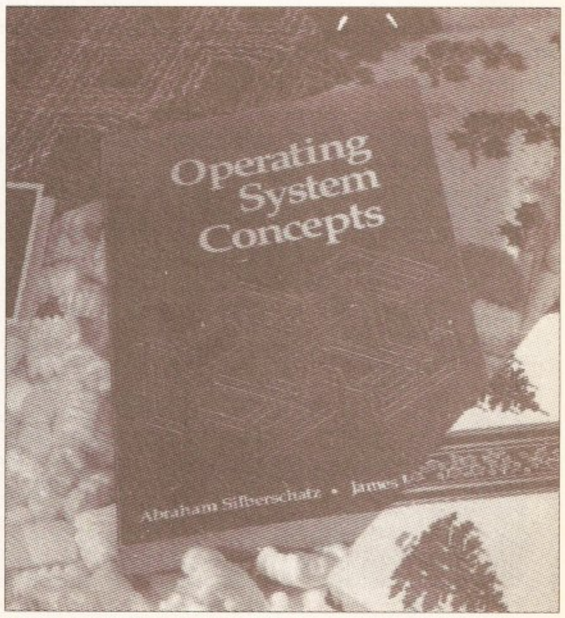
Totally Intuition-based, you can copy a floppy (OFS or FFS) into a RAM buffer or a file on your hard drive, then copy from that buffer or file to up to four floppies at once in just 100 seconds verified or 70 seconds unverified. If you're running a PD library and you've got a lot of duplications to make, *SuperDuper* has an Auto button so that all you have to do to is stick a disk in the drive for it to start copying. And If you're using slightly dodgy disks you can set the number of retries *SuperDuper* should attempt before giving up and logging an error on that track on that drive.

It'll even format four disks at once, speak to you, and shut down Workbench if you're short of memory.

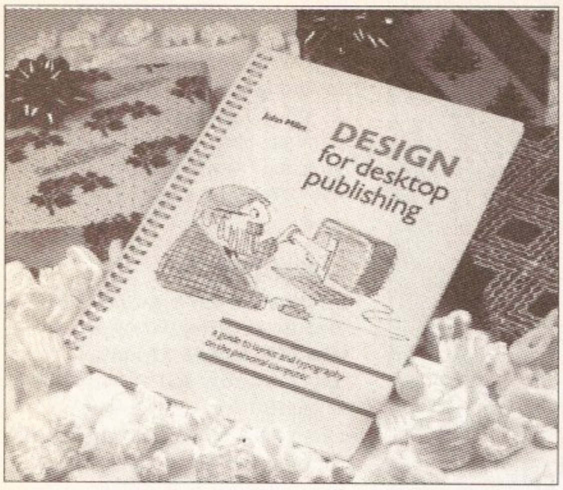
OPERATING SYSTEM CONCEPTS

(the Alternate Edition) by Abraham Siberschatz and James L Peterson
£21.95 from Addison Wesley
ISBN 0 201 50734 X

When you've finshed eating and drinking yourself silly, and have become bored with making paper aeroplanes from the pages of the



***Operating System Concepts* – the book of knowledge**



Design for Desktop Publishing (see page 23) will entertain you while you learn, it's the best of the bunch

Amiga ROM Kernel Manuals, you might decide that you need a bit of help with those weird and wonderful O/S terms that most Amiga documentation assumes you understand. If you are into this heavyweight area then the 573 pages of *Operating System Concepts* might be just the thing.

This book, first printed in 1983, provides one of the most accessible accounts of operating systems and their design available today. The third (alternate) edition serves two purposes: firstly, it aims to bring the existing text up-to-date and secondly, it provides greater emphasis on concurrency.

The first chapter provides a historical introduction to the subject: simple single-user/single-job situations (the use of spooling, buffering etc,) are used to illustrate the benefits of improving processor utilisation. From here the natural extension to multi-programmed and time-sharing systems, which result in the need for I/O and memory protection schemes, is made.

Following this come chapters which provide the basic framework for modular layer-based operating systems as they are recognized today. This includes dealing with environments which support concurrent processes, discussions of the special problems concerning semaphores, deadlock situations, general resource co-ordination and inter-process commucation. This book does not deal with the Amiga's operating system as such but obviously much of the material will be of great interest to the serious Amiga programmer. The book's greatest strength is that it offers full coverage of the ideas which underpin good operating systems.

TRACEY

£7.95 from SideWise, PO Box 4, Totnes, Devon TQ9 7EN

For inept artists attempting to copy a printed picture to the screen, even tracing the outlines of a picture with the mouse is fraught with difficulties. What do you do when the line you're trying to follow vanishes underneath the mouse? The answer is a little gadget, aptly named Tracey. This is a plastic widget that attaches to either side of your mouse. Consisting of a clear plastic disc with crosshairs built in, it allows you to follow a picture outline without losing sight of the picture itself. Although perhaps a little expensive for what you get, it's usefulness more than makes up for the price, and it is certainly a good deal cheaper than paying out for a digitiser. Tracey fits any flat-sided mouse and can easily be removed when not in use.

FUN AND GAMES

Yes, we know we said we'd never do it, but it *is* Christmas and Andy, the jolly ol' ed (who's doning his red suit and snow-white beard even as I write) has relented. Just for this once, mind you. For a limited period only, you can read, in *Amiga Shopper*, some game reviews. There – I said it. I'll have to go and put some money in the swear box now...

MEGATRAVELLER 1: THE ZHODANI CONSPIRACY

(1Mb required)
£29.99 Published by Empire Software ☎ 0268 541212

This is a science fiction game in which you get the chance to travel to planets with unpronounceable names and do unspeakable things to the people you find there.

It's based around an old role-playing game. A team of five characters is created, all of whom have collected a set of skills whilst serving in one of several careers (assumed to have taken place before the game begins). Once the team is assembled, the mission begins.

The Galactic Imperium has been at war with the Zhodani on and off for over half a millenium. Whilst relaxing in a bar, your team bumps into an agent who has discovered the Zhodani's latest plot for galactic domination. She just manages to hand over some holographic data and decoding keys, and then the bad guys arrive.

At this point, it's really up to you what happens next (after you've killed or avoided the thugs who are shooting at you, that is). You can wander around the planet where you begin, visit a museum, buy some kit from a shop or, more interestingly, climb aboard a spaceship and take off for pastures new.

MegaTraveller is one of those games that take absolutely ages to complete. You can spend your time exploring, getting embroiled in mindless violence, or even, if you're really keen, trying to break the *Zhodani Conspiracy*. Why watch *Star Wars* this Christmas when you can play it?

MIG-29M SUPER FULCRUM

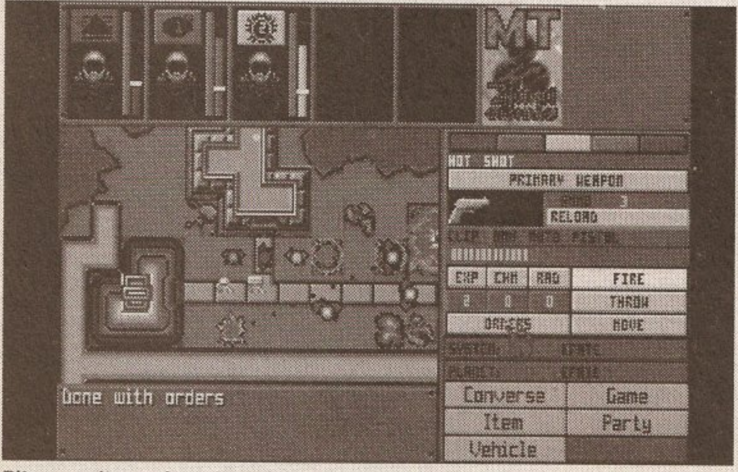
(1Mb required)
£39.99 Published by Domark
☎ 081 780 2224

Da, comrade, it's true – now you have the chance to fly in our top secret, super-duper MiG-29M (which won't officially be in the skies until the middle of the decade). And what's more, you're on a United Nations mission to stop a bunch of rebels who've illegally taken over a region of land in South America. This means you get the chance to shoot things! (Hurrah!). It also means that things shoot back (Awww!).

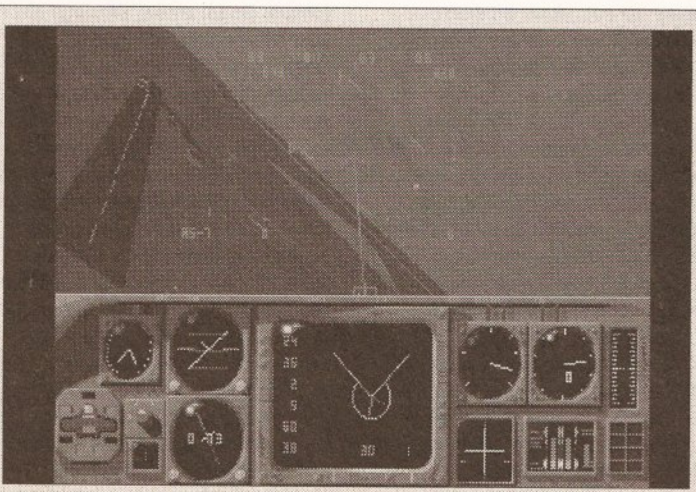
You can begin the campaign by choosing one of four missions: breaking the rebel supply line; clearing their air bases; destroying strategic installations; and taking the rebel base. Needless to say, actually learning how to keep the plane in the air is initially much more pressing than the fulfilling of missions.

All of the usual plane paraphernalia is present: head up display, air-to-air missiles, air-to-ground missiles, chaff, flares, and lots and lots of control keys. Because you are taking part in an ongoing campaign, objectives change depending on your success. This makes things a little more interesting than the average flight sim.

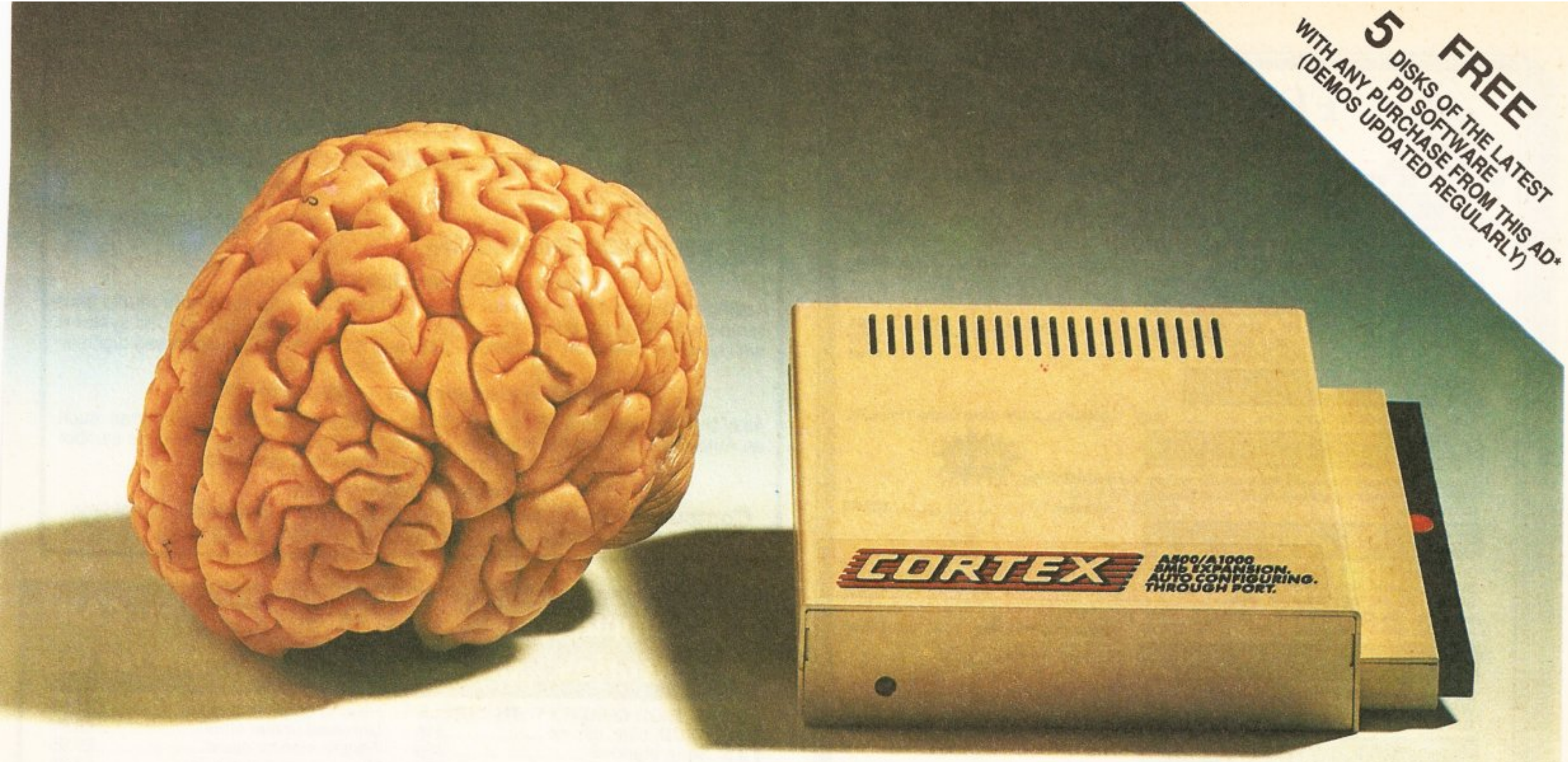
Another feature of *MiG-29M* is its accuracy (at least that's what it says in the manual) and speed, although the latter is gained at the expense of ground scenery. If shooting down interdictors and stopping the march of tyranny is your idea of a good time after Christmas lunch, then you could do worse than booting up a copy of *MiG29M Super Fulcrum*. AS



Pit your wits against the evil Zhodani in *Megatraveller 1*



Be a master of the air and fly the *MIG-29M Super Fulcrum*



A brain The next best thing

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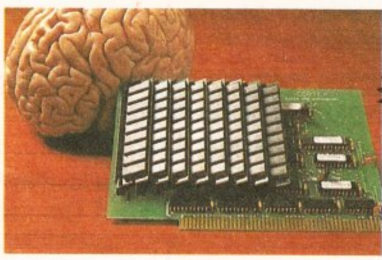
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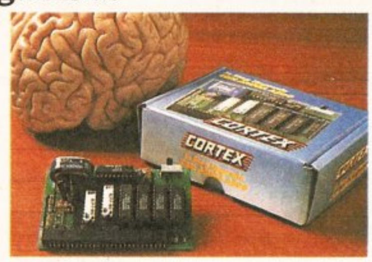
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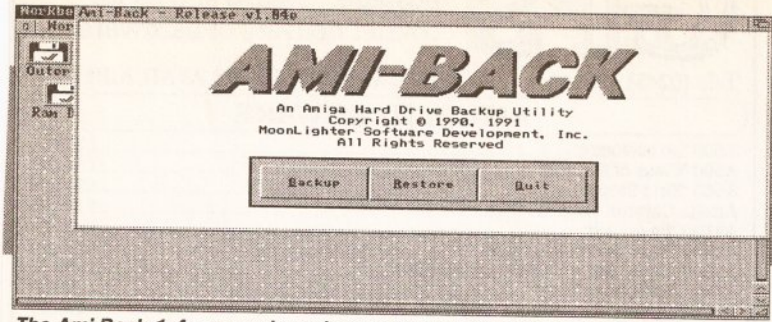
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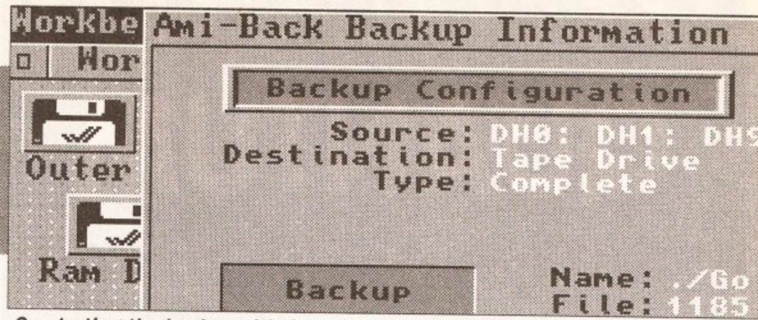
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The Ami-Back 1.4 – up and running, ready to tackle the task of backing up the all-important hard disk of your machine...



On starting the back-up, it's just a matter of sitting there and feeding new media to the Amiga as requested

The second generation of hard disk back-ups

Paul Ockenden finds Ami-Back 1.4 to be more than just an ordinary hard disk back-up...

Most people would agree that backing up a hard disk is an important task to be done regularly – these same people will probably also admit that their hard disk hasn't been backed up for ages, and if their drive were to go kaputt tomorrow, they'd lose lots of data! My guess is that the reason for this is that backing up a hard disk is one of the Amiga's most tedious tasks, so, any tool which facilitates back-ups gets a big thumbs-up from me. *Ami-Back 1.4* is such a tool.

Ami-Back is a second generation Amiga hard disk back-up program. Those of the first generation such as *Quarterback*, *SuperBack*, *MRBack-up* etc, provided a means of copying the hard disk's contents to a series of floppies, and of restoring those files from the floppies, should your hard disk fail, or if you deleted a file accidentally. These programs performed a similar function, and only really competed in terms of ease of use. Incidentally *SuperBack II* was the clear winner, although it never received the sales it deserved.

As a 'second generation' program, *Ami-Back* provides many features above and beyond the 'floppy back-up/restore' cycle: back-up to SCSI tape drives for example. Although these devices cost £400 plus, they make backing up a hard disk easier. For example, my hard disk has around 130Mb used – that amounts to a lot of floppies, but I can fit it all on one 250Mb tape. *Ami-Back* supports direct and sequential access drives so there shouldn't be any compatibility problems.

Another useful facility is the ability to perform 'image' back-ups. This technique is borrowed from mainframe systems. Rather than copying data from the hard disk on a file-by-file basis, it copies track-by-track – everything from the destination device is copied, even errors and blank spaces! So what advantage is there? Doesn't this make the back-up bigger? Yes, but what if you have an A-Max partition? Or a partition devoted to an IBM emulator or AmigaUnix? The image back-up option lets you back up these too, all from AmigaDOS.

AUTOMATIC BACK-UP

An auxiliary program supplied with *Ami-Back* is *Ami-Sched*. This automatically fires up *Ami-Back* at pre-determined times. The program is flexible so as to make it possible to specify patternssuch as once per hour, or 10 past 6 on 28 July each year! The drawback of *Ami-Sched* is that the Amiga must be running to trigger the event. If it was switched off at 6 o'clock on 28 July, and switched back on at 7, our annual back-up wouldn't occur, lettting down an otherwise excellent utility.

There are 2 versions of *Ami-Back* and *Ami-Sched* supplied, one for AmigaDOS 1.3, and one for 2.0. Although they look similar, version 2.0 uses the operating system for many features of the user interface (and seems to conform closely to the new Commodore 'style guide') whereas the 1.3 version emulates these features itself. There are extras in the 2.0 version, but nothing worth worrying about if you are still running under 1.3.

Ami-Back can be used from the CLI, or via an Intuition interface. I guess that most users would use the program via Intuition. On starting the program you're presented with 3 basic options – back-up, restore and quit. The back-up and restore options are configurable, and hitting the back-up button, for example, will start saving the data on your hard disk using your default configuration.

Back-ups can be sent to floppy (using all available floppy drives on your system, including the new high density drives), another hard disk partition, an AmigaDOS file, or a tape drive. When accessing tape drives, the SCSI unit ID and buffer size must also be selected.

The back-up can be of the files on one partition, or 'multi-volume', and can be *all* files on your selected volumes, or all files since a certain date, or all files changed since the last back-up. It is also possible to exclude files by name or size. Last but not least, there's a 'selective back-up' option allowing you (via a file requester) to select which files and/or directories are included in the back-up.

HIGH SPEED SOFTWARE

I found the software to be extremely reliable. The back-up speed is very impressive – at about 1Mb per minute to floppy, and I managed to back up 130Mb to tape in 45 minutes.

For folks with Commodore 590/2091 hard disk controllers with version 6.1 ROMs, worried about the 'reselection bug' causing the system to lock-up if there are 2 SCSI devices accessing the bus, don't panic – the *Ami-Back* includes an option which only allows 1 device to access the bus at once.

The manual supplied only covers *Ami-Back* up to version 1.2, and the differences between 1.2 and 1.4 are explained in a ReadMe file on the distribution disk, so an up-to-date manual would be useful, but all the information is there if you look for it.

> **" As anyone will tell you, backing up the hard disk is one of the most important tasks you'll have to carry out. This program, *Ami-Back 1.4*, will make that job easier. Software for the Amiga is on the up! "**
>
> **Paul Ockenden**

Ami-Back is an excellent program. A hard disk back-up utility is an essential tool for anyone with a hard disk, and *Ami-Back* is certainly the best back-up utility I have seen. Remember, this program could pay for itself many times over.

I purchased my copy directly from Moonlighter Software in the US, but I believe that Moonlighter is having talks with some of the UK distributors, so when you read this, it should be available over here. AS

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UK distributors: Omega Projects
14 Derwent Close
Culcheth, Warrington
Cheshire WA3 5DY
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Making Waves

Peter Jones shows how you too can ham it up, with a little help from AmigaSat and Bonito.

When it comes to plucking things from the air, what could be handier than the Amiga to accomplish this trick.

Peter Jones (Call-sign ON9APJ)

Amateur radio occasionally hits the headlines when disaster or war occurs somewhere in the world and communications are limited to the amateur frequencies, but most people's knowledge is restricted to a hilarious episode entitled *The Ham* from a comedy television series by the late Tony Hancock.

After the second world war, most amateurs built their own equipment or purchased ex-War Department material from one of the numerous Army surplus stores. Lisle Street, in London's Soho, was full of such stores in the fifties and proved more of a magnet to a certain section of the male population than the other, more publicised, attractions of the area! Today, all seem to have been replaced by Chinese restaurants.

Today the military hand-me-downs have largely disappeared, replaced by sophisticated equipment made mostly in Japan and the Far East. It is relatively expensive to purchase, the limited customer base preventing the hi-fi manufacturers from bringing the prices down. A complete amateur radio station could cost several thousand pounds.

The affordable personal computer of the late seventies was seized on by amateur radio enthusiasts who were naturally attracted to boxes full of electronics and the personal computer was quickly accepted into the ham world and put to good use. Much hardware and software is now available in this field: there's something for virtually every machine (Spectrums, Commodore 64s, BBCs, Dragons, etc.).

TRANSMITTING

To obtain a licence to transmit on those bands of the radio spectrum reserved for amateur operation requires the passing of an exam (the Radio Amateurs' Examination, the 'RAE', administered by the City and Guilds of London Institute). This consists of multiple-choice answers to questions on radio theory, operation and regulations, and unless a morse test is also successfully taken, such transmission is limited to the VHF and UHF frequencies. A novice licence has recently been introduced, however, which allows limited use of the HF bands. (If you would like further information contact the Radio Society of Great Britain on ☎ 0707 59015, or the equivalent organisation in your country if you live outside the UK).

RECEIVING

Receiving radio signals is another matter. Strictly speaking, the law says that you are entitled to listen only to broadcast transmissions such as those put out by the BBC and similar bodies. In practice, it is impossible to enforce such a law. Furthermore, some meteorological, press and satellite services require you to pay a fee to receive their transmissions, while others, like the Meteorological Office in the U.K., will give permission and make no charge.

Many of the interesting things which can be achieved with a computer are reception-only (Packet Radio excepted), so a good radio communications receiver linked to an efficient aerial is the main requirement to get started. Such receivers vary in price from as little as a hundred pounds to well into 4 figures, but reasonably efficient, well-equipped receivers can be purchased at around £300-400. I would recommend reading through an issue of *Short Wave Magazine* to get an idea of what is available. I prefer a Bearcat DX1000 which tunes from 10KHz to 30MHz, or in other words the long-, medium-, and short-wave bands. It cost about £300 four years ago, and you could probably pick one up second-hand for less than £150 today. Other reputable makes include: Yaesu, JRC, ICOM, and Lowe Electronics (nothing British, yet!). The Lowe HF-225 at £429 is considered to be good value having been voted "Receiver of the Year" by the World Radio and TV Handbook when it was launched a couple of years ago.

FACSIMILE TRANSMISSION

The decision made, the receiver purchased and installed, what then? Let's start with the reception of facsimile signals. By feeding a signal from the receiver via an interface to the serial port of the Amiga and then running the appropriate software, it is possible to receive images sent by one radio amateur to another, weather maps from meteorological stations, photos transmitted by various press agencies, as well as satellite pictures of the Earth which have been received by a ground station and retransmitted. Adding a frequency converter and a more specialised aerial to the basic set up enables these same pictures to be received directly from space, be it from one of the geo-stationary Meteosat series of satellites or the orbiting Russian or American ones.

Photo facsimile transmission, either via a telephone line or by radio, has been around for more than fifty years. The Beckenham-based Muirhead company provided equipment for most of the newspapers in the United Kingdom. The original facsimile machines were quite large, a metre and a half long and high. The facsimile transmitter contained a small metal drum, around which was folded a normal photograph held firmly in place by two sprung clips. The drum rotated at a fixed speed (usually 60 or 120 rpm). As it revolved, a lamp housing, mounted a fixed distance above the surface of the drum, shone a pinpoint beam of light on to the photograph. With each revolution, the lamp was shifted a fraction laterally. The reflected light was picked up by a photo-sensitive cell.

The amount of light received by the cell varied depending on whether the beam of light was passing over a light or dark section of the

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JARGON BUSTING • JARGON BUSTING

AMTOR : Amateur teleprinter over radio

APT: Automatic picture transmission

BARTG: British Amateur Radio Teletype (Teledata) Group

Baud: A unit used to describe transmission speeds for digitalsignals. For a single-channel transmission, one bauud is equivalent to one digital bit of information being transmitted per second.

CW: Continuous wave (morse)

FAX: Facsimile transmission; an image obtained in this way

GHz: GigaHertz (1,000,000,000 cycles per second)

Geo-stationary:Describes a satellite whose orbital speed exactly matches that of the Earth's rotation, so that it always remains in the same position in space relative to a point on the Earth's surface

HAM: Licensed radio amateur (not to be confused with CB)

KHz: KiloHertz (1000 cycles per second)

MENA: Middle East news agency

MHz: MegaHertz (1000,000 cycles per second)

RAE: Radio Amateurs Examination (City & Guilds)

RPM: Revolutions per minute

RSGB: Radio Society of Great Britain

RTTY: Radio Teletype

TNC: Terminal node controller

UHF: Ultra high frequency

VHF: Very high frequency

VLF: Very low frequency

WEFAX: Weather facsimile

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photograph and a varying voltage was thus produced. This in turn was used to vary the frequency of the signal being sent to the distant facsimile receiver. At the far end, the process was reversed. A piece of unexposed bromide paper was held on a rotating drum inside a light-tight container. A shutter ran along the length of this container. When the facsimile receiver was sealed, this shutter opened to allow a beam of light, the brightness of which was being controlled by the varying incoming signal, to travel along the paper, exposing it a strip at a time. The light-tight container was then taken to a photographic dark room, where the picture was developed in the normal way. Scanning across a flat bed using a stylus to burn the image on to a roll of electrosensitive paper was another method used (very similar to modern office fax machines. The machines have become more compact and sophisticated over the years, the original lamp being replaced by a laser beam and the received picture stored and displayed electronically if required, but the process is still essentially the same today.

If you tune your radio receiver towards the bottom end of its range, ie below 150KHz (BBC Radio 2 long-wave is found at 200KHz), you will find many signals originating from what are called utility stations. These can be teleprinter transmissions, Radio navigation beacons, standard time signals, and facsimile. Some of meteorological offices transmit fax in this region of the band. These include: Moscow on 53.6KHz; Prague, 106.8KHz and 111.8KHz; and Offenbach, Germany, 117.4KHz and 134.2KHz. It is fairly easy to identify a fax signal: it sounds like a warbling whistle being interrupted once or twice per second. Depending on the type of receiver you buy, you might find that it lacks sensitivity at these very low frequencies.

A VLF to HF converter from Datong Electronicswill get round the problem though as it adds 28MHz to the low frequency required. For example, if you wish to tune in Offenbach Meteo on 134KHz, you would set the frequency indicator to display 28.134MHz. At this frequency, the average receiver has enough sensitivity to cope. Offenbach is a good station from which to receive fax since It retransmits satellite pictures of the Earth, daylight and infra-red, as well as weather maps. A press agency, DPA, in Frankfurt, transmits news photos on 139KHz.

From the long wave band you must then jump to the short waves (2MHz-30MHz). The list of press, weather, and military fax stations is too long to list, but some careful listening should fill a few pages of your notebook. Those with limited patience could purchase *A Guide to Utility Stations*, one of the books by Klingenfuss Publications of Tuebingen, Germany. It contains a comprehensive list of all types of utility stations on frequencies up to 30MHz and is updated yearly. The company also offers an audio cassette with samples to help you identify different signals.

TELEPRINTER RECEPTION

The other main mode of non-voice communication on the air waves is RTTY, or teleprinter signals. These signals, be they military, diplomatic, meteorological or press are also to be found on the amateur radio bands, each band having a section reserved for this transmission mode. Amateur operators generally use a speed of 45.5 baud, while commercial stations will use 50, 75, 100 baud or higher.

If you think that you already spend too much time in front of your Amiga, this aspect of computing should be avoided, since it opens up so many more, potentially time-consuming fields. If, on the other hand, you have an understanding spouse and consider that radio communication is a natural extension of your hobby, then take the plunge.

AMIGASAT WEATHER SATELLITE DISPLAY SYSTEM

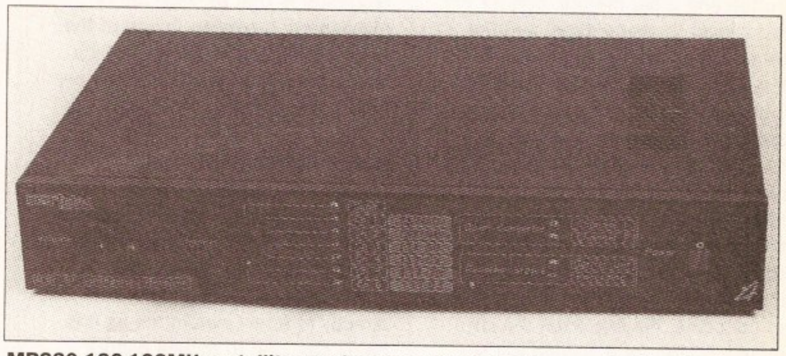
There are several countries which now have their own satellites in space. Places include the USA, USSR, China, India, Japan, and Europe. These satellites fall more or less into 2 categories: polar-orbiting; or geo-stationary. Polar-orbiting satellites circle the earth at a distance of between



The MSC20 down converter from Martelec Communication Systems.



View of Europe from a NOAA polar-orbiting satellite.



MRS30 136-138MHz satellite receiver from Martelec Communication Systems.

roughly 800 and 1,000km, while the geosynchronous satellites such as Meteosat are much further out at 36,000Km. The two types of satellites complement each other. The geostationary satellite can see about one third of the Earth's surface from its fixed position above the equator, but is not very useful in the polar regions. The polar-orbiting satellites, however, orbiting about every hundred minutes, can cover the whole of the earth's surface in twenty-five degree segments.

Both types of satellite transmit visible light and infra-red images, while the geo-stationary ones send water vapour images, which give extra information on humidity levels and cloud densities. One fundamental difference between the 2 types is that the polar types transmit a continuous picture of the strip of surface it is passing over with the visual light and infra-red images side-by-side (just like looking at one of those Shoot-'Em-Up Construction Kit games, although *Amiga Shopper* readers never play games do they?), while the geostationary type takes a discrete picture.

This type of reception requires quite a bit of specialised equipment. Polar-orbiting weather satellites transmit in the 137MHz band, and a fixed omni-directional rooftop antenna together with a receiver capable of being tuned to 136-138MHz is required. If you wish to capture images from the METEOSAT geo-stationary weather satellites, a dish aerial and what is known as a down converter must be added to the set-up. The down converter takes the signals from the METEOSAT satellite which are transmitted at around 1.7GHz and outputs them at 137MHz so that they can be fed into the polar-orbiting receiver. Martelec Communications Systems (☎ 0420 82752) offer a complete package, including *AmigaSat*, for £887.

The *AmigaSat* software is provided on a single floppy disk. The application will run under versions 1.2, 1.3, and 2.0 of the operating system and can be easily transferred to a hard disk, although it is protected using the program's serial number. The program is launched, then, from the CLI by typing AMIGASAT plus the serial number. A minimum of 1Mb of RAM is required, at least 2Mb is recommended.

Once the *AmigaSat* box has been connected to the Amiga's parallel interface and the program launched,

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the title screen is displayed. Pressing any key replaces the title screen by a black one with a small sign in the middle saying 'Display Empty'. Control of the program is initially from pull-down menus. Interlace can be turned on if you have an Amiga 3000 or a Flicker Fixer card and a Multi-sync monitor.

Selecting SAMPLE PICTURE from the PROJECT menu puts up the IMAGE SAMPLE SELECTION requester, where a choice is made between 4 different satellites: NOAA, Meteosat, Meteor, and Feng Yun. The number of vertical lines to sample is also selected at this stage, and this can be from 32 to 512. The default is 512 although less can be selected if you are having low memory problems or wish to take part of a picture. The OK button is then pressed, and the APT PICTURE SAMPLE requester is displayed. This has an ADJUST button and 2 bar meters, one for the input level (in percentage) and the other for the frequency (in Hz). Having made sure that a signal is being received, the adjust button is pressed. The meter indicators start to move up and down. A clean signal (which is relatively free from interference) is now awaited. When the frequency meter has settled down to around 2400Hz and the input level indicator is in the top half of the scale, holding down the left mouse button for a second will set the values, which are then displayed digitally below the meters. If the values are more than seventy percent and around 2400Hz, the SAMPLE button is pressed, and the picture starts to roll up the screen.

If the signal is coming from one of the NOAA (polar-orbiting) satellites, the display will be half-size horizontally and consist of 2 images, one visual and one infra-red separated by synchronisation bars. As these pictures are continuous, when you feel that you have the picture you require, holding the left mouse button down again for about a second stops the sampling. A file name for the picture is selected in the APT PICTURE SAMPLE requester and the picture saved to disk.

Meteosat pictures have definite beginnings and endings, and the program does most of the work for you. A small window appears showing you when the program has found the start, phasing and signal tones from Meteosat, and the sample will automatically stop when the picture is complete. The digital header of the WEFAX picture is then decoded from the image and is used as the file name, eg MET4 VIS9110101500C03. A view of Europe from a Meteosat geo-stationary satellite is shown on this page, and a similar view of Europe from a NOAA polar-orbiting satellite can be seen on the previous page.

Once the picture is captured, the real strength of the program reveals itself: image processing and enhancement. Up to 4 satellite images can be held in memory at once in 4 displays. They can be displayed individually at full-size, or all 4 together at quarter-size. The same image can be copied to more than one display, so that, for instance, subsequent image processing can be compared to the original, or 2 images can be mathematically combined or scaled into a third image. For example, infra red and visual NOAA images can be loaded into 2 displays and added to, or subtracted from each other to reveal more information about cloud and ground detail. This does take up a lot of memory, hence the desirability of at least 2Mb of RAM.

A neat feature of the FILE requester is that as each file is highlighted, a preview image of the file's contents is displayed, which saves having to load it into memory before being able to look at it.

Image Processing Space prevents a detailed summary of everything that an *AmigaSat* can do, but here is a brief list to give you some idea of its sophistication.

Image processing is applied directly to a raw picture file as it is being sampled to reduce picture noise without reducing pixel resolution. This technique, Digital Noise Filtering, produces a high picture quality.
Further processing is possible by:

Maths Functions Images may be combined mathematically to produce images not possible with other systems, including adding, subtracting and multiplying images. Operations are weighted to allow the quantity of source and destination image data to be defined.

Adding colours Sixteen colours from the 4096 colour Amiga palette can be displayed in high resolution.

Stretching Contrast Picture appearance can be radically altered using this technique. The satellites respond to an extremely wide range of spectral radiation. This range may not be necessary for some localities; by reducing it and subsequently stretching the contrast of the remaining range, features which were initially invisible can be brought out. Four different pre-set contrast stretching algorithms are available.

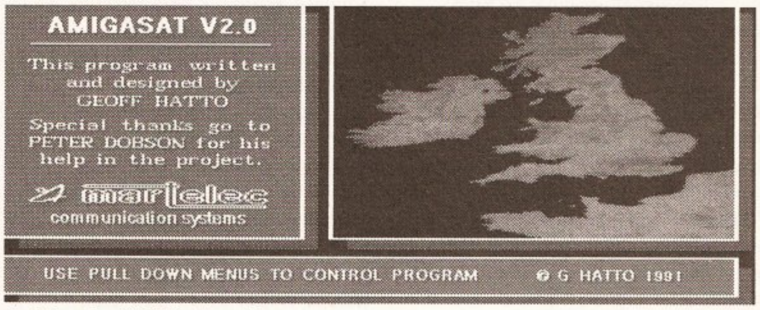
Filters 5 different types of digital filtering of the image data are provided, or you can define your own.

Just what is packet radio?

As its name suggests, packet radio is a network of amateur radio stations, each of which serves as a node for the reception and retransmission of packets of signals, similar to the packet switching networks on digital land lines. This mode is open only to licensed radio amateur operators, since it requires both radio transmission and reception.

The most popular protocol is called AX25, and as with its telecoms counterpart, X25, a message is broken up into segments, an address is added to each of those segments and transmitted. A terminal node controller (TNC) is linked to a transceiver and a personal computer. The amateur station then serves as one node in what has become a world-wide network, receiving and transmitting all the data on the network. Only packets addressed to that particular station are retained to be reconstituted into a complete message. Packet radio in the United Kingdom can be found at 144.650MHz which is part of the 2-metre band allocated to amateur radio. More information on packet radio can be obtained from the British Amateur Radio Teletype Group (BARTG) (☎ 0203 668491) which also publishes its own magazine, *Datacom*.

SMOOTH: used to reduce the effect of high frequencies on an image. Edges become less pronounced.
EDG-ENH: makes edges stand out further, enhances coastal outlines and surface details.
MEDIAN: Another type of smoothing filter using a median averaging technique. For reducing level of pixels produced by noise.
LINEFIX: Compares the lines immediately above and below a line lost by a burst of interference and replaces the line with an average of the two.
ANTIFADE: Designed to reduce the effects of doppler fading due to multipath signals arriving at the satellite receiver.



Amigasat – £163 but worth every penny.

By way of conclusion, *AmigaSat* is an excellent program. The program makes capturing images easy and, furthermore, it provides plenty of tools for tweaking the images to remove noise and transmission errors, as well as enhancing obscure details. And who knows, with the addition of a genlock and a video camera, the system could well give Michael Fish cause for concern.

BONITO RADIOCOM

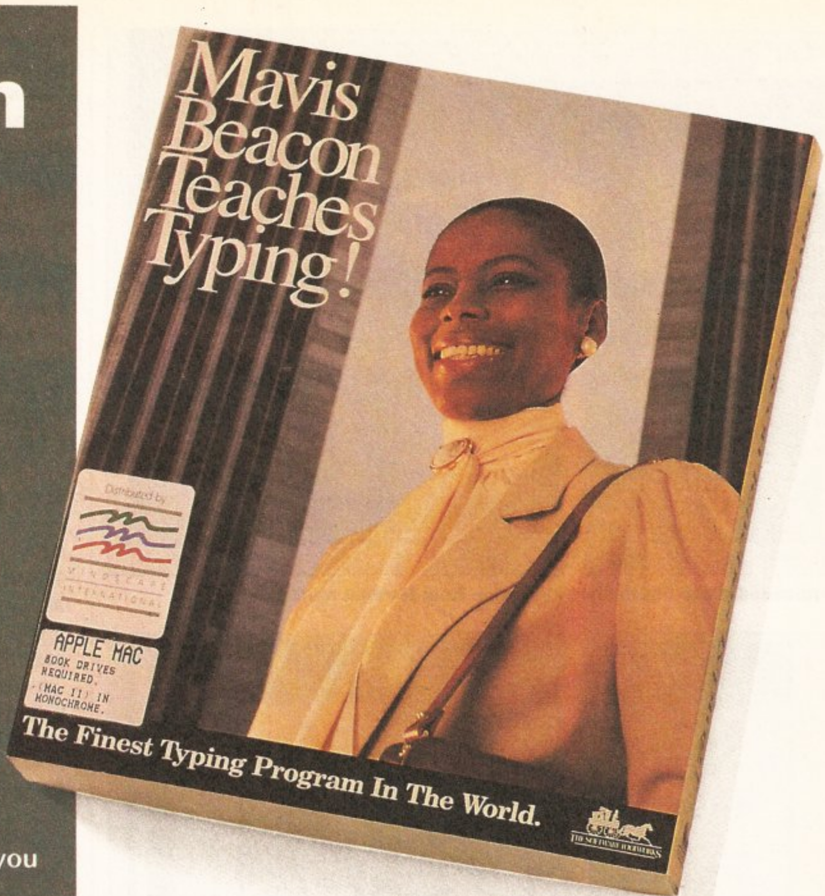
This is a useful all-round package, in as much as it enables you to send and receive fax, RTTY (teleprinter), and automatic morse signals, as well as having the facility to synchronise the Amiga clock with the standard time signals from either the UK or Germany. The hardware consists of a small black box with 2 leads, one of which plugs in to the headphone socket of the radio receiver, while the other connects to the serial plug on the Amiga. On the front of the interface is a rotatable knob and a red LED. The software comes on one floppy disk. Each of the modes available, Fax, RTTY, Morse, Time, is a separate program which could be run independently from the CLI. The menu just makes them all available on the screen and it can be customised for the user's individual preferences. It would also be possible to use one of the Amiga-specific menu programs, such as MyMenu, to access each of the RadioCom modules.

Manual The manual is awful. Around thirty cheaply-produced, A5 pages apparently written in English by a German and only one diagram in the whole thing. Explanations were also brief to the point of being cryptic. I am not knocking the linguistic capability of the guy who wrote it, but I could do just about as much in German! But you just cannot get away with this sort of thing in a technical manual. I only hope this is a provisional effort and that a much improved version is on the way. It

continued on page 34

Mavis Beacon Teaches Typing

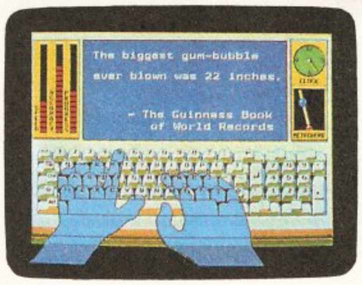
-simply the finest typing instructor in the world.



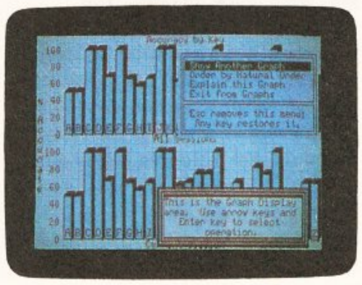
Learn from the best with this award winning, best selling program. This expert system takes you step-by-step through the entire keyboard. Selecting quotes from history's greatest writings, using riddles and hundreds of fascinating facts from the Guinness Book of World Records* this unique program makes learning interesting and fun.

Mavis Beacon Teaches Typing creates customized learning exercises and gently coaches you along at your own speed and skill level, checking your progress lesson by lesson.

- Stunning 2D and 3D graphics including life-like keyboard, 'Guide-Hands' and on-screen progress graphs.
- Help windows and Speed, Accuracy and Completion meters all appear on-screen.
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- Complete typing textbook included.



'Guide Hands' type with you to show perfect technique.



Speed, Accuracy and Completion meters on-screen.

THE SOFTWARE TOOLWORKS

The Coach House,
Hooklands Estate, Scaynes Hill,
West Sussex RH177NG

Tel: Sales (0444) 831761
Product info' (0898) 234214

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Address:

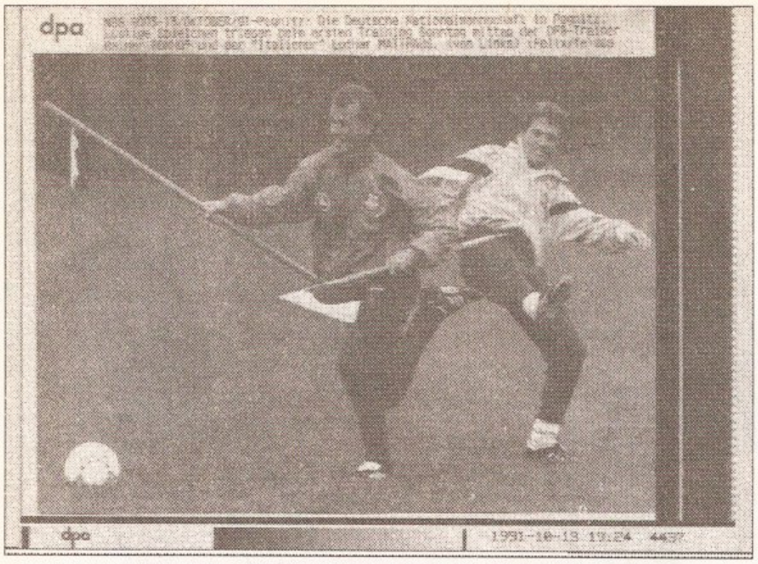
Please send me:

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Downloaded press photo showing scene from football match.



Downloaded press photo showing map of Yugoslavia.

continued from page 32

certainly removed a lot of the pleasure to be had in using the package. "During transmission a diddle is switched on or off" will no doubt bring a grin to your face, but that grin will become a bit lop-sided while you are trying to find out exactly what that function key does!

Fax reception I tested this by tuning to the German Press Agency (DPA) in Frankfurt on 139KHz. Since I use the VLF/HF converter, this meant choosing 28.139KHz. I selected BFAX reception from the menu, chose the DPA parameters file from the list displayed on the right-hand side of the screen and pressed return. Then came the fiddly bit... I had to adjust the fine tuner of the receiver *and* the knob on the *RadioCom* interface box to set the correct levels for black and white. A small window was opened on the screen containing a thermometer-type gauge. Top represented white, bottom black. The knobs were turned until the indicator was flickering up and down nicely between the two, showing that the various levels of grey were being received. The incoming picture was about 4 times the size of the screen, but by using the arrow keys it was extremely easy to move about the entire image as it was coming in. Pressing the F7 key saved the full picture to disk. I opted to save disk space and make viewing of the picture easier by saving in a compressed mode (F9). This reduced the picture to 640 x 512 without losing information. Two of the pictures from this session, a shot from a football match and a map of Yugoslavia can be seen above. It is also possible to set the program to save each photo to disk automatically (SHIFT-F7), so that the machine can be left unattended. Given that files can be 400K or more in size, this option requires a hard disk, preferably, a *big* hard disk!

The software revealed its non-Amiga origins by requiring key presses to activate the various functions: Keys 1-5 selected 60,90,120,180 and 240rpm for the drum speed; F3 toggled the printer on and off; F4 measured the frequency of the start and stop tones; shift-F4 displayed the time momentarily; F5 toggled the display between positive and negative; F6 displayed a mirror image of the original; F8 and SHIFT-F8 allowed the start and stop frequency respectively to be changed; while SHIFT-F9 and CTR-F9 set the start and stop times for automatic disk storage of photos.

Pictures can be sent to the printer by the program, but only Epson dot-matrix printers are supported directly. *RadioCom* does, however, provide a module to convert its own .BFAX files to ILBM files which can then be printed using a graphics program such as *DPaint*.

False colours can also be added to the grey-scale pictures. Since this involved creating 3 different files, one each for cyan, magenta, and yellow, selecting the same point on all 3 versions, creating a raw file from these 3, and then have the program calculate a colour picture (all'described' in the manual),I didn't bother. It was much simpler to load the picture into *DPaint*.

RTTY (RadioTeleType) reception
This is a very comprehensive module. Teleprinter signals can be tricky to resolve, but this program provided the facilities needed. It could handle speeds from 30 to 600 baud, reverse the polarity of a signal, and decipher 7 and 8-bit ASCII transmissions as well as 5-bit Baudot code. I have a dedicated RTTY reader (the MM2001 Microprocessor-controlled RTTY to TV Converter from Microwave Modules Ltd which deciphers signals and outputs the result directly to a monitor. I tuned to the Middle East News Agency on 10.610MHZ, and fed the signal to the dedicated converter and the *RadioCom* RTTY program. The latter was markedly superior. A teleprinter signal is susceptible to interference, resulting in lost characters. Watching the same message scrolling up the monitors, side-by-side, it was clear that the *RadioCom* program was dealing much more successfully with the signal. I estimated that while the MM2001 was getting 90 percent of the text, the *RadioCom* software was achieving 96-97 percent.

CW (Morse) reception This was by far the weakest of the 3 main modules. The manual admits that it was taken from other programs by Bonito, called *SuperCom*, and that because of this RTTY capability is also included, with the advice that you should not use it, since the *RadioCom* RTTY module was better. There is also a warning which will not go down well with the average Amiga user: "Caution! Do not use the mouse with this part of the programm (sic)". The program did its job, once I had mastered the keystrokes, but I found that it was difficult to tune to the exact frequency for optimal reception.

Time signals In Britain, the standard time transmissions are put out by the MSF station. In Germany this is handled by DCF77. These stations send a coded signal containing the date and time with an extremely high degree of accuracy. When this module is run, the Amiga clock time is displayed in large red figures on-screen. When enough data is received, the figures turn green with the correct time and date. Pressing function key F1 updates the clock. Simple and efficient.

Conclusion This program is worth having, despite its shortcomings in certain areas. It received fax and teleprinter signals very well. The manual, as said, must be replaced for the UK market. A lot more effort could also go into integrating it fully into the Amiga environment. At the moment it is a bit of a hybrid. AS

CHECKOUT AMIGASAT

Ease of Use ●●●●●
Excellent program which takes full advantage of the Amiga's possibilities.

Usefulness ●●●●○
Could be extended (the author is already thinking about it) to include facsimiles (press meteo etc) transmitted from ground stations

Documentation ●●●●○
Clearly written and housed in a good quality A5 ring binder.

Price Value ●●●●●
Not cheap, at £163, but for what it offers, I think that it is worth every penny.

Overall rating ●●●●●

If you want to get into satellite fax reception, this is the way to go.

CHECKOUT BONITO

Ease of Use ●●○○○
Much more could have been done to take advantage of the Amiga.

Usefulness ●●●●○
Very good for the reception of facsimile, RTTY and the standard time transmissions, not so good for morse.

Documentation ●○○○○
Unacceptable for the British market.

Price Value ●●○○○
Too expensive as it stands at £195.

Overall rating ●●●○○

A good program spoiled by the documentation and the fact that it has been adapted from another environment.

A captain's log

Frank Heritage looks at a new call logger, guaranteed to leave you time to enjoy your hobby.

To operate an amateur radio station requires an operating licence, one section of which requires that you keep an accurate logbook of all your activities. Until recently, this logbook had to be in book-form; you could not have a loose-leaf folder into which you kept adding pages. The licence also precluded the use of computers. Recently the regulations have been relaxed to allow the use of computer databases to store the necessary information. As well as being a licensing requirement, it is useful to be able to refer back through the log to see whether you have spoken to a particular station or area for an award.

With more and more Amigas finding their way into the radio stations, the machine was ideally situated for use as a logbook! As the computer will multitask happily, it should be possible to run a packet radio communications program at the same time as the logbook, simply flicking to the log at the start and end of each contact. Another advantage of the Amiga in the shack is its low level of radio interference.

THE PROGRAM

The *G4TYF Logbook* will run on a 512k Amiga with 1 drive, and is supplied on a single 3.5 inch unprotected floppy disk, to enable you to make a working back-up of the application. Also on the disk is the manual which runs out to 8 pages on a printer. The manual goes through the program's funcitons, describing each feature and its operation. One nice touch with the program is its ability to access the manual while the program is running, so, if you do get stuck, help is on screen!

On launching the program you are presented with the main screen – all commands are available on this screen both in the pulldown menus and as "quick keys". These are obtained using the right Amiga key with logical use of the initial letters of the commands. The main layout of the screen resembles that of a conventional logbook and is colour coordinated with each alternate entry being a second colour.

OPERATING

When you first start the logbook you have to define the operating conditions at that particular time. This includes your location and Worked-all-Britain details, as well as your transmitter power and mode of operation. You are also able to set the frequency on which you are operating, although this feature only really comes into its own if you often operate on one spot frequency or record only the general band of operation, as it is awkward to change the frequency for each entry. Once these details are entered you can start the log. A window appears on the screen with a prompt for each of the fields of data entry, the first is the callsign of the station being worked. Once entered, the log will check to see if you have had previous contact with this station. If you have, details like the operator's name and location will automatically be entered. Entry into the various fields is achieved by hitting return to get to the correct position, then if the field is not automatically filled, or you wish to change the data, new information is keyed in.

All the details you specified at the set-up are entered as you tab to their field. Although these are default settings (the signal report defaults to 59 for speech contacts and 599 for morse contacts), each can be changed at the input stage. If you are using the log as you contact people rather than filling in the details after, most of it can be entered with 1 or 2 key strokes – once you start changing fields (power and frequency) it is slightly long-winded.

At the end of the submenu you are given the option of signing off with the station you are speaking to or of starting a net. This has to be one of the main features of this program. It will quite cheerfully keep track of several stations all at once, for the net controllers among you this has to be a boon!

Net operation allows the stations to be logged off in any order. Once you have finished with a station the program updates the logbook and writes the new information to disk. Each floppy disk should be capable of holding about four thousand entries, at which point you simply make a new log, and start all over again.

The logging program has not been tried with a hard disk, although no problems can be foreseen in running from such a device. Having separate logs does mean that the program will not find the information concerning station details of those that you have worked previously from the old file. However, a total of four thousand entries does mean a lot of contacts!

Having finished your contact with someone, you may wish to send them a QSL card to confirm the contact. At the prompt you can tag a contact for printing. At the stroke of a key the printer buzzes away and will do multiple or single labels to go on the back of your card with all the contact details, including your locator information.

The layout of this label is not re-configurable, but should certainly be sufficient for most needs. Tagged contacts can be printed at a later date, allowing you to do all your QSL printing in one batch every couple of weeks. There is also a facility enabling you to output pages of the log, a good idea in case of a corrupt disk! However, it's a pity that when printing the log pages, the remarks column does not.

Although the program should multitask, during the review period several comms packages were tried without success – on one occasion the program was forced to quit while a logbook was open, causing the program to become corrupt. Good thing it was a back-up!

One of the features of running a computerised log is the ease with which a previous contact with a station can be found, and this program is no exception in providing a good search facility. Any of the fields can be searched allowing you to find previous contacts with a particular location or name as well as with individual stations – although why on earth you would want to find all the contacts which you had ever had with anybody called John tends to puzzle me!

All the entries can be fully edited, and additional entries can be added in the middle of the file if needed. However, the program will not sort the entries into chronological order. Updates to the program (supplied at half price, £12.50, for the first year after registration) are due to add a sort feature. The latest update also includes provision for adding your transceiver and aerial details for up to three different set-ups for output on to the labels for the cards.

Each program is supplied with your callsign embedded into the code, and appears on all the pages and on the labels for the QSL cards. This does very nicely as a form of copy protection, although does put a spanner in the works if you want to use the log for another station, for instance a special event station.

Provision is made for moving to another location in the British Isles whereby your callsign's prefix changes. You can also add mobile suffixes to the call. If you are a member of a club, and would like a copy for the club, contact the author, quoting the club callsign and he will send you a complimentary copy! AS

JARGON BUSTING • JARGON BUSTING

Awards – amateur radio has many awards available for collecting, most of which are achieved by contacting stations in as many locator squares as possible. These squares are allocated the world over, some specified by longitude and latitude, others by the National Grid. Other awards are available for working in different countries.

Worked-all-Britain – One such award is the WAB award which involves speaking to people in the 10 kilometre national grid squares. Awards are for working a number of these squares, and these continue to get harder until you have worked in all the squares in the British Isles!

QSL cards – The final compliment after chatting to a fellow radio amateur used to be to send a postcard to him to confirm the details of your contact. This is still common practice, although the cards these days are usually used to confirm locator squares for awards purposes.

Net – If more than two stations are in contact together, then a net forms. One station will often act as control for the net, which often involves amateurs with similar interests, for instance an Amiga owners' net.

SHOPPING LIST

G4TYF Log................. £25
available from the author
Mr E Aston
64 Gurney Valley
Bishop Aukland,
Co. Durham, DL14 8RW

All present and correct

Jason Holborn takes the new presentation system by Oxxi/Aegis for a test drive

> "Creating professional-looking documents is something the Amiga excels at, but the quality of its software leaves something to be desired. Could *Presentation Master* be the program to put the Amiga at the top of the pile."
> Jason Holborn

A picture tells a thousand words, but Oxxi/Aegis believes a thousand words are not enough which is why they've developed *Presentation Master*. The program is a powerful presentation authoring system oriented towards the planning, production, organisation and final display of presentations.

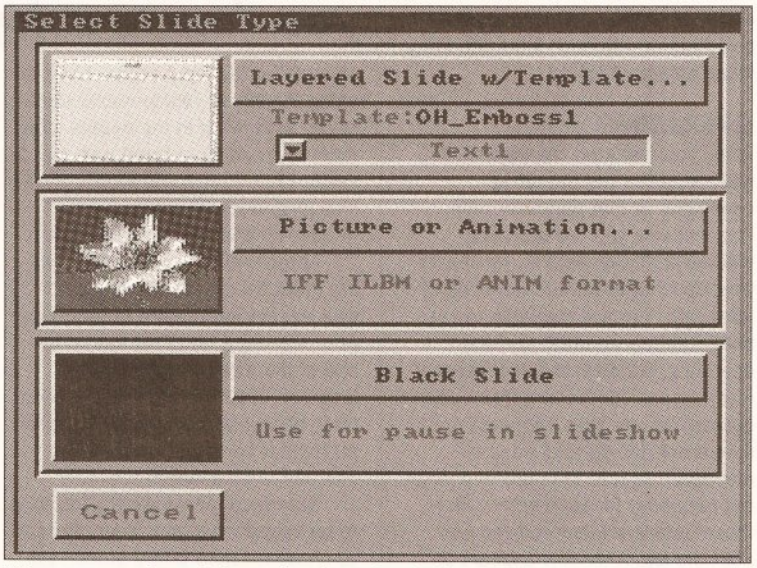
As Oxxi/Aegis is keen to point out, *Presentation Master* goes beyond previous presentation authoring systems for the Amiga by enabling you not only to organise and display your presentation, but also to create much of the artwork without having to rely on third party products. Built into it is a powerful business graphics program and a host of structured drawing tools which all work together to produce presentations which would have previously been impossible without considerable outlay.

Even if you don't intend using your Amiga for presentations, the program's powerful imaging tools make it an ideal system for slide production when used in conjunction with a Polaroid Palette system. By transferring the screen image to slide format, professional slides can be created at a minimal cost.

Presentation Master isn't the first program of its kind to be released on the Amiga, but it's by far the most complete. Sure, there are packages which can handle various aspects of presentation production, but you'll be pushed to find a package which provides *Presentation Master*'s scope.

DISKOUNT RATES

Believe it or not, *Presentation Master* comes on six disks, all of which are crammed with files and associated programs. If this wasn't enough, you'll be more shocked to learn that – in true Aegis style – even these six disks aren't enough to hold the complete package. To keep the disk count down, Aegis have had to compress the files into an archive!



When you create a slide, you're given the choice of three basic slide types

Before you start creating that stunning presentation, you must first install *Presentation Master* and all its files on to either a hard disk or a separate set of floppies. (However, with this amount of data required to get the program running, you're really best off with a hard disk.) Although it will run fine on a floppy system, even with twin drives you'll find yourself swapping disks frequently.

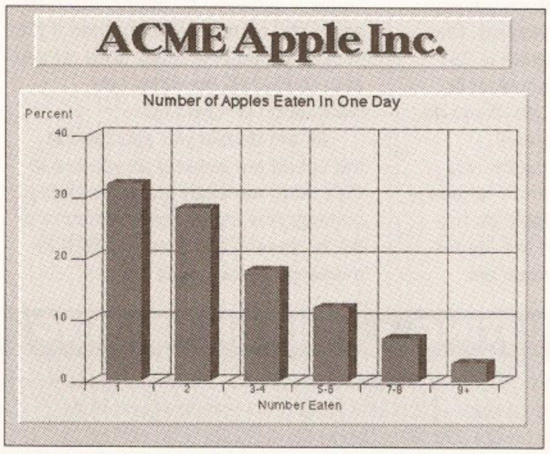
Installing those six disks is surprisingly simple thanks to a well designed installation program which takes away most of the work. You can leave the program to install *Presentation Master* in its entirety. However, for the more experienced user it offers an option which gives you more control over which files are installed and where.

Getting everything installed is fairly time consuming, but once it's done you're ready to rock and roll... The next surprise comes when you try to run *Presentation Master* – the main program doesn't have its own icon. Instead, you must double click on a project icon containing a number of useful defaults which make setting up the program easier. As you become experienced, you can ditch these to set up your own.

SLIPPING AND SLIDING

The heart of *Presentation Master* is the slide. There are three different types of slide available – an animation/picture slide, a blank slide (used for putting a pause in your presentation) and – most interesting of all – a layered slide. As the name suggests, an animation/picture slide can display animation in standard IFF ANIM format or a picture in any of the Amiga's screen mode.

The most powerful of these slide formats is the layered slide which can be used to display information in a variety of different formats. At their most basic level, layered slides consist of three basic elements – templates, content and annotation.



With *Presentation Master* you can create those professional looking charts and graphs with ease

The template layer is a set of attributes which dictate the appearance and format of the slide. To save you having to set up each and every new slide from scratch, the template layer can be shared between slides, giving your slides a uniformed look. A single slide format may eventually prove to be limiting, which is why *Presentation Master* enables you to create families of templates. You could, for example, have one template just for presenting text, one for displaying a graph and text and another for displaying pictures and a graph.

To make things more confusing, the template layer consists of two separate elements – a backdrop and regions. The backdrop contains the background colour and image plus the slide's colour palette. The region defines the type, size and placement of any default layers to be placed on the slide (eg the slide's title).

BOXING CLEVER

Content layers carry the information which the slide is to present. These layers are varied – lines of text, imported images, graphs and charts. Finally, the annotation layer enables you to add graphics or text on top of content layers. In fact there seems little difference between content and annotation layers and the manual doesn't help clarify any differences.

The most basic content layer is the text layer which can contain text rendered in any standard Amiga bitmapped font. Just like a desktop publishing program, you can enter the text directly into the layer (which is presented onscreen as a box), move the text layer around, resize it and so on. What's more, each time you alter the layer or its contents, *Presentation Master* will automatically reformat the layer with the changes taken into consideration. Those of you who have used other DTP programs such as *ProPage* will realise that this approach is very similar to the box system used in the majority of DTP programs.

MASTERING CHARTS

One of *Presentation Master*'s most powerful facilities is its ability to generate a variety of different charts from data provided by the user. The program supports a number of chart types including pie, bar, line, area and scatter charts. These can be rendered in 2D or 3D perspective.

Entering the chart data into *Presentation Master* is handled particularly well thanks to the incorporation of a Spreadsheet-like screen which looks and feels just

like a real spreadsheet. It doesn't have any spreadsheet operations such as addition, subtraction etc, so it's limited to the entering of chart data. If you've got this information stored in an existing spreadsheet file, *Presentation Master* can import it, so financial information can be pulled in directly from programs like *Advantage* and *Plan/IT*.

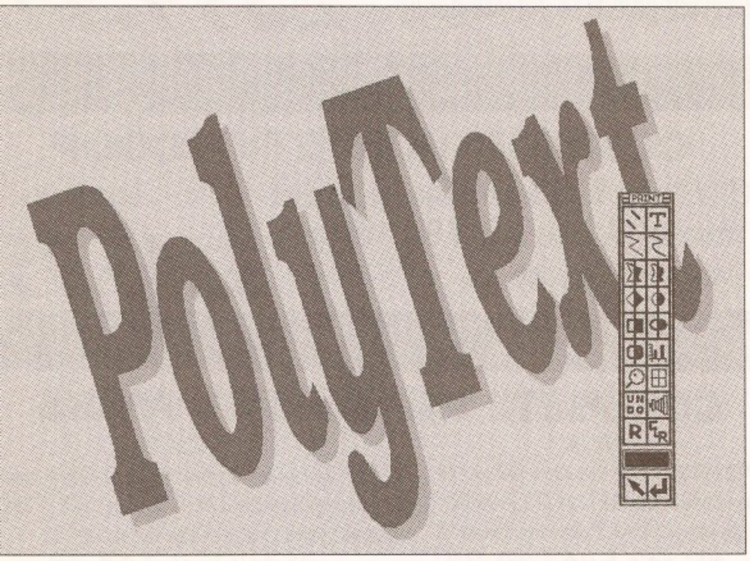
Once this chart data has been entered, all that remains is to mark out the relevant lists of data, select 'Plot' and *Presentation Master* does the rest. If you're not happy with the chart, you can easily change it to any one of those available.

The charts which *Presentation Master* produces are generated as structured objects. They can therefore easily be edited using the program's powerful structured object creations tools, enabling you to pull out sections of a pie chart, change the colour of a particular bar etc.

structured painting package. Although working with structured objects takes getting used to and requires more work to get decent results, such a system is very flexible and the results are often of far greater quality than any bitmapped image, especially when printed to a high resolution device such as a *Postscript* imagesetter.

WHO'S A PRETTY POLY?

Bitmapped text is all very nice, but it has one major disadvantage – when you expand it, it becomes chunky. To get around this unavoidable problem, *Presentation Master* includes a powerful PolyText facility which incorporates text into your slides which call upon Outline fonts. A wide selection of outline fonts are included (twelve in total), but for those of you who still aren't satisfied, the program fully supports both *PageStream* and Gold Disk's



For jaggie-free text, *Presentation Master*'s Polytext facility is the bizz

PAINT BY NUMBERS

You can also create structured images from scratch using *Presentation Master*'s powerful structured painting tools. Like a CAD package, structured images are built up from a series of points which are then joined together to form the objects which make up your image. This approach allows the objects to be resized and rotated with no loss in quality.

The *Presentation Master* object painting tools allow you to create a number of 'primitives' which are brought together to form the final image. These primitives include straight lines, bezier curves, filled and outlined ellipses, circles, rectangles, angular polygons and freehand shapes. Even after they have been drawn, you can pick them up and move them about, pull out points, flip, rotate and distort them.

Most Amiga users have used bitmap-based painting programs like *DPaint*, but few have ever used a

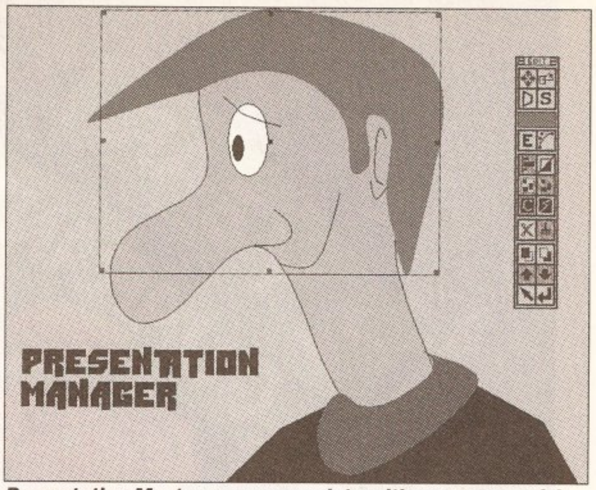
Compugraphic outline fonts.

Because the fonts are rendered as structured objects, you can expand, contract and rotate text with no loss in quality whatsoever. Not content with simple rotation and resizing operations, *Presentation Master* can carry out operations on outline text which would put *Professional Draw* to shame. These include 2D distortion, bending, and wrapping of text on to a circle.

A variety of effects can be applied to the fonts such as adding shadows, embossing text and a variety of graduated fills. All these effects are carried out at top speed. If you've an accelerated Amiga, many of these operations are executed almost instantly!

THE SLIDE SORTER

Creating slides is all very well, but the real power of *Presentation Master* is the amount of control it gives you over the organisation of your presentation. The nerve centre of all this is the Slide Sorter screen, specifically designed to provide an intuitive interface for creating, editing and playing your presentation. *Presentation Master* presentations are organised in a hierarchical tree structure which groups slides to arrange them logically. At the 'top' of every presentation is a single slide called the Root Parent. Every other slide is called a Child. That is, it's below the root parent in the presentation's hierarchy. Child slides can also have child slides beneath them, causing the hierarchy to branch out further.



***Presentation Master* comes complete with a very powerful structured paint package that puts *ProDraw* to shame**

Sounds complicated? Well, surprisingly, it's a very simple system to use thanks to *Presentation Master*'s graphical method of displaying the hierarchy. Each slide is displayed as a thumbnail representation, enabling you to manipulate a large number of slides onscreen. Slides can be moved about within the hierarchy by picking them up and dropping them into their new position. If you pick up a slide that has a number of child slides associated with it, these too are transferred automatically.

Presentation Master can produce presentations which either run unattended or – better still – are fully interactive. Through the use of AmigaVision-like hotspots, you can set up a parent slide which enables you to display any of its child slides by clicking on a rectangular hotspot. Using this method of presentation control, your given audience views the slides which it is interested in.

BY WAY OF CONCLUSION

Oxxi/Aegis has been having a rough time over the past year, but they're back in top form with *Presentation Master*. Aegis had earned themself something of a bad name for making potentially powerful packages almost unusable due to sloppy user interface design (ANIMagic users are sure to agree!), but they've done Amiga users proud with *Presentation Master*. Its user interface is logical and easy to use without locking you away from the program's true power.

One area in which *Presentation Master* really stands out is that of structured graphics. Having used programs like *X-CAD* and *ProDraw 2.0*, I was surprised by how quickly and easily *Presentation Master* creates structured artwork of a very high quality which would have been impossible with the likes of *ProDraw*.

By now, I suspect you've already guessed that I'm impressed by *Presentation Master*. It can be a rather frustrating program to use at first, but once you've found your way around the program's many requesters and gadgets, creating professional looking slides and presentations becomes a breeze. AS

SHOPPING LIST

Presentation Master ....
.........UK price not yet available
by Oxxi/Aegis PO Box 90309
Long Beach CA 90809-0309

Distributed in UK by:
HB Marketing,
Unit 3, Poyle 14
Colnbrook Berks SL3 ODX
☎ 0753 686000

CHECKOUT
PRESENTATION MASTER

Ease of Use ●●●●○
The program initially takes some getting used to, but once you've found your way around the myriad of menus and requesters, it's logical and easy to use.

Features ●●●○○
Feature packed yet easy to use, Presentation Master is by far the most powerful presentation authoring system available for the Amiga.

Documentation ●●●○○
The accompanying manual is certainly large, but it's hardly bedtime reading material. Some of its descriptions are a little vague at times, but on the whole it's well written and comprehensive.

Speed ●●●●○
Considering the amount of work the program is doing, Presentation Master zips along at an impressive rate.

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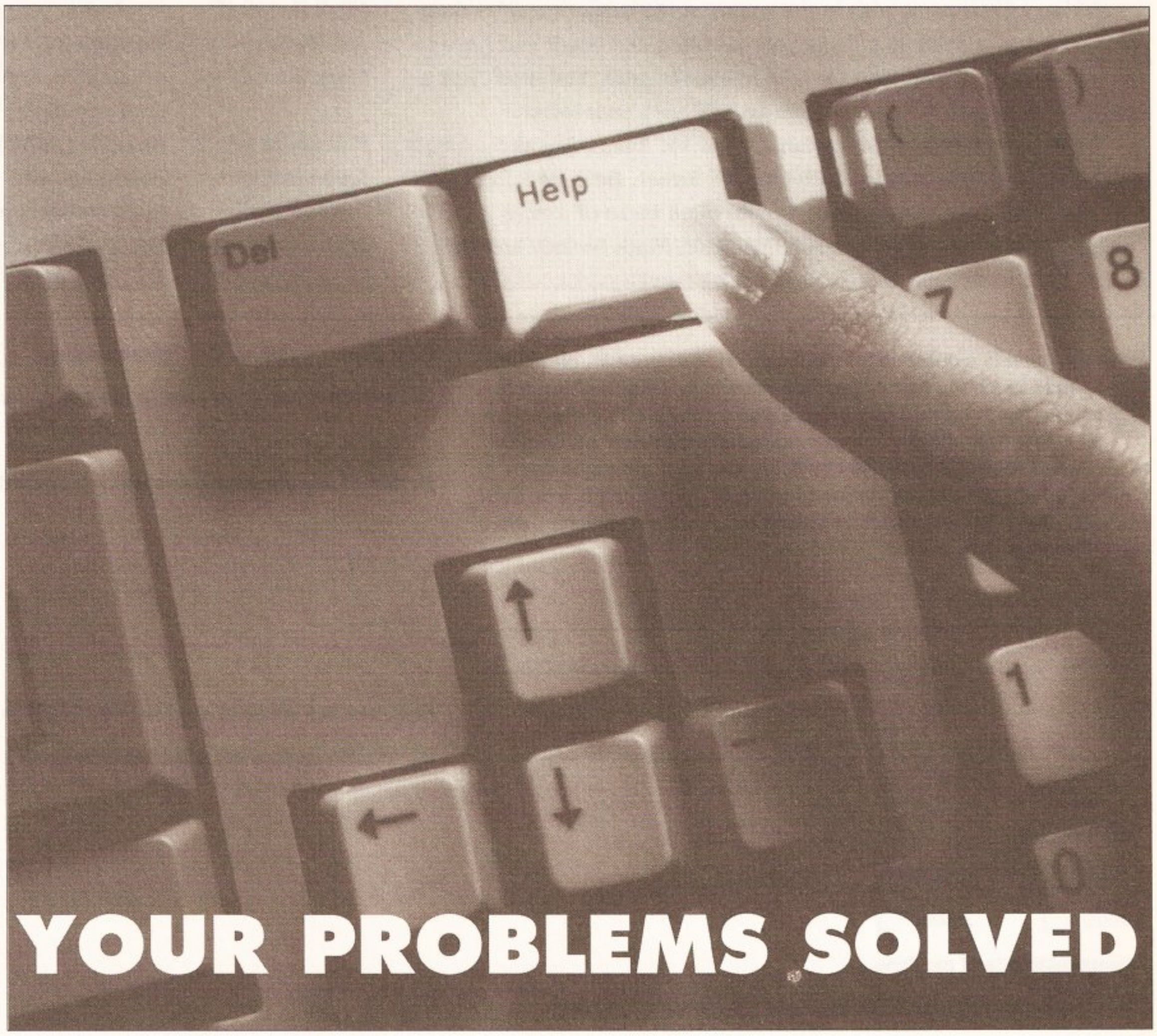
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CONTENTS AT-A-GLANCE

OUR EXPERTS TACKLE YOUR REAL-LIFE PROBLEMS

AMIGA ANSWERS



SO WHAT DO ALL THOSE ICONS MEAN?

Beginners: this icon will appear next to any questions which are 'basic' in content.

General: this icon is used for any general Amiga-related queries.

Caution: be sure that you fully understand the answer before trying it out.

Danger: the answer to this question could well invalidate your warranty – or you!

Hardware: this icon is used to denote questions relating to general hardware.

Buying advice: we use this icon if the question asks us for buying advice.

Printers: this icon denotes a query about printers, printer drivers and so on.

Technical: any queries about programming will have this icon next to them.

Video: this icon relates to any query about using your Amiga with video hardware.

Music: this icon is for questions about MIDI, sampling, synthesizers and so on.

Programs: any program-specific queries have this icon next to them.

Comms: if your question relates to comms, this is the icon that we'll use.

WHATEVER YOUR PROBLEM WITH THE AMIGA, WE ARE HERE TO SOLVE IT

That's the task we have set ourselves in giving you the best possible support for your Amiga. We are confident that our experts can cope with any technical questions you can throw at them. If they don't already know the answer to your problem, they will find it out for you.

We are prepared to deal with any problem you have with the Amiga, from general enquiries about AmigaDOS or Workbench, through questions about specific pieces of software and hardware, to advice on what you need to buy to do a particular task. If it's to do with the Amiga, we will help out. What we cannot do is offer this service over the telephone – do not phone us with your enquiries, but write to us at the address below.

We also cannot enter into personal correspondence – all enquiries will be dealt with in the pages of the magazine. This does mean a bit of a delay in solving your problem, but you'll just have to be a little patient and wait for it to appear in print. You won't get a personal reply even if you enclose an SAE with your letter.

Send your question on the form below to: Amiga Answers, *Amiga Shopper*, Beauford Court, 30 Monmouth Street, Bath BA1 2BW.

The Amiga Answers panel consists of all three of *Amiga Shopper*'s consultant editors – Jeff Walker, Mark Smiddy and Phil South – and, of course, our resident technical editor Cliff Ramshaw. We will also be calling on the services of all our other contributors, so you won't be able to catch us napping whatever the subject of your query.

Each panelist will be dealing with queries in their own specialist area(s) so it would help us greatly if, when writing, you label your query envelope with the name of the expert who can solve your particular problem. Below is a list of their areas of expertise. It's a list that we will add to and update every month, so you will know who to write to about any subjects not mentioned here.

Gary Whiteley –	Video
Paul Overaa –	Programming, music
Mick Draycott –	Hardware, programming, MIDI
Jeff Walker –	Desktop publishing, programming
Mark Smiddy –	AmigaDOS, business, CDTV, hardware projects, hard and floppy disk drives
Phil South –	Graphics, AMOS
Jason Holborn –	Public domain
Jolyon Ralph –	Programming, hardware
Cliff Ramshaw –	The really hard stuff that no-one else can answer

If you send in a question for the Amiga Answers experts, please fill in and include the form below (or a photocopy if you don't want to cut up your magazine). And please also make sure that you include all the relevant details – version numbers of software and so on – so that we have the best chance of helping you. Send your form and question to: Amiga Answers, *Amiga Shopper*, 30 Monmouth Street, Bath BA1 2BW. Sorry, but we cannot personally reply to any questions – even if you include an SAE.

Name: ____________________

Address: ____________________

____

____

Your machine:

A500 ☐ **A1000** ☐ **A1500** ☐

A2000 ☐ **A3000** ☐

Approximate age of machine: __________

Kickstart version (displayed at the 'Insert Workbench' prompt)

1.2 ☐ **1.3** ☐ **2.x** ☐

Workbench revision (written on the Workbench disk)

1.2 ☐ **1.3** ☐ **1.3.2** ☐ **2.x** ☐

PCB revision (if known). Do not take you machine apart just to look for this! __________

Total memory fitted (see AVAIL in Shell for 1.3 Workbench) ________

Chip memory available (see AVAIL in Shell) __________

Agnus chip (if known) __________

Extra drive #1 (3.5"/5.25") as DF__: Manufacturer __________

Extra drive #2 (3.5"/5.25") as DF__: Manufacturer __________

Hard disk: ____Mb as DH__: Manufacturer __________

Extra RAM fitted – type, size in Mb and manufacturer __________

Details of any other hardware which could help us to answer your question:

Now, use this space to describe your problem, including as much relevant information as possible. Please continue on a separate sheet if necessary.

AS 9

'HAT IS RAM?

I have a 1Mb Amiga A500 and additional floppy drive. I am frustrated by not being ble to access *Protext* and *Prodata* t the same time. I will buy more emory but am I better off buying a ard drive? Please explain the inction and capabilities of each eripheral and which is more likely o suit my purpose.

Alan Wheetman
Fulham
London

RAM expansion increases the miga's memory. As programs are oaded from disk into the machine, o this memory (RAM) fills up. As you ave discovered, if you have isufficient memory to load more ian one large program then you can iss goodbye to your multitasking bilities because there is not enough emory to fit another program in.

A hard disk on the other hand is ist like a floppy drive except that it faster, larger and you cannot put esh disks in. Many of the programs ou use from day to day can fit on a ard disk, so there is no need to eplace it with a another disk. It is a ommon misconception that RAM xpansion and a hard drive are the ame – they are not!

The problem that you have ncountered is down to insufficient torage space. Your answer is to icrease the memory capacity of the iachine by purchasing a RAM xpansion. This can be done either rough the trap-door, through the ideways expansion slot, or by uying a hard disk with memory xpansion inside it. (I hope that last it didn't confuse you!). ***MD***

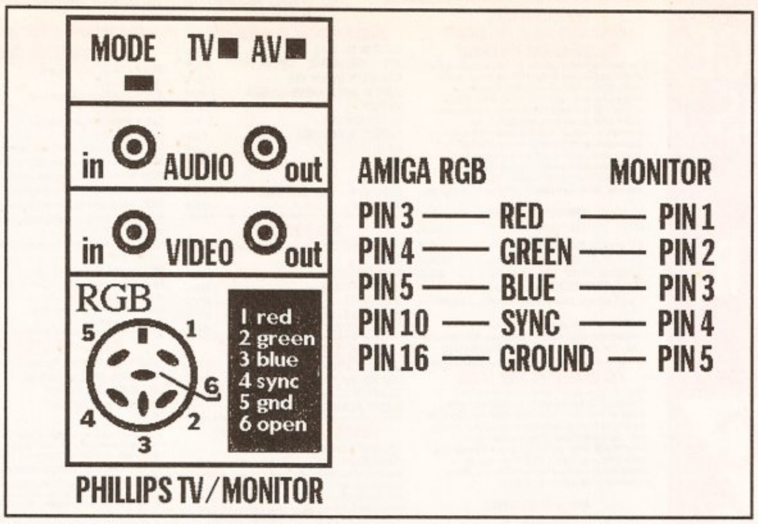
/AKING CONNECTIONS

I cannot get a lead to connect my Amiga 500 to a Philips Colour TV/Monitor (model not pecified) and have to use a nodulator instead. I have been told y one retailer that my monitor was ncompatible with the Amiga. Is this orrect?

I have enclosed a diagram of the onnections on the back of the nonitor. As a total beginner, I am a it lost as to where to start. Can ou help get me connected?

Philip Ashman
Blackpool

am sure there's a cure for this. I ooked up your cable requirement in ne VIDEK catalogue (an electronic upplier which sells all kinds of omputer cables and connectors – ncluding the elusive Amiga 23 pin D-ype – ☎ 081-204 6690) but was nable to find one tailor-made for our needs. But don't despair.



How to bridge that gap between the Philips monitor and your Amiga.

You should be able to solve the problem by making your own (if you can solder) or by getting someone else to make one up for you. You'll require a 23 pin 'D' socket connector (see above), a 6 pin DIN plug and some multicore cable (preferably screened). Then connect as shown in the above diagram. Take care not to wire up any of the power pins (numbered 21, 22 and 23) on the RGB output from the Amiga as you could cause some serious damage to your Amiga.

Alternatively, try Trilogic on ☎ 0274 691115 as they advertise a range of monitor leads and may well have the one you need. ***GW***

HIT THE GROUND RUNNING

How do I make my AMOS programs boot up and run independently of the editor? Is this one of the functions of the compiler?

F Callander
Falkirk
Stirlingshire

Yes, this is one of the functions of the compiler, although its primary function is to make programs go faster. Having said that, it's perfectly possible to make ordinary AMOS programs boot and run without the editor.

Firstly, you need a blank disk. Then, go into AMOS and load the RAMOS installation program (which is kept on the AMOS Extras disk). You will be given a series of disk prompts, during which time the program will copy all the necessary system files to your blank disk.

Once this is done, you must copy the AMOS program itself to the disk. This can be done with AMOS's 'Save As' option. The program must be called 'AUTOEXEC.AMOS'.

Finally, leave AMOS and open a Shell or CLI window. Type:

```
install ?
```

A prompt will come up, listing the options for the install command. When it does, insert your disk in drive 0 and type:

```
df0:
```

This makes the disk bootable. And that's all there is to it. ***CR***

MONITORING CONNECTIONS

After buying a Rendale 8802 genlock and spending many hours trying to get the thing working, I was more than a little disappointed to hear that my Sharp TV (which is used as a monitor) was not suitable for displaying the image from the genlock. Do all the genlocks suffer this problem? I've seen the Roctec genlock and the advert states that it is compatible with a TV. Is this the case?

I have heard that it is possible to record Amiga footage on to video tape without a genlock. How?

Stephen Pinches
Bishops Stortford

Unfortunately you don't say what kind of connections your Sharp monitor has, though I imagine that there will only be a choice of 3 possibilities – SCART, video or aerial (RF) socket. In any case, there will almost certainly be a way to connect your genlock up to the TV. Firstly, connect your genlock up to the computer, with video in from a VCR or camera and video out to a record VCR.

Then the simplest way would be to take the RF signal out from the VCR to the TV, as you would do if you were simply using it as a video deck. Alternatively, if the TV has a video input (though I think this is probably unlikely), take the video signal out from the video recorder. The final option is to buy a suitably connected SCART lead (if your TV uses this style of connector) and take the video out from the record VCR to the TV via this. Your local electronics shop may be able to supply it.

Secondly – I suppose that in order to be viewed on a standard TV a genlock must have an RF output. But, as this is not generally the case, you could say that such genlocks cannot be used with a TV. However, there must be some way of seeing the images – as the object of a genlock is ultimately to provide video output. As the user generally wants to record this output, it is usually a simple matter to take an output from the VCR to the TV for monitoring.

And finally: you're right, it is possible to record pictures from an Amiga to tape without using a genlock. You could use a modulator (though I personally don't favour this method as the quality can suffer too much); alternatively you could use an RGB converter – which converts the Amiga RGB output to composite video. On the old Amiga 1000 you could even get colour video direct from the machine. ***GW***

STARTUP STOPPED

I had a particular interest in the Cracking the Shell section of issue 6 of *Amiga Shopper*. As I've now got a 1Mb machine I thought that I would

continued on page 46

JARGON BUSTING • JARGON BUSTING

Compiler – A means of translating a program to render it understandable to the computer. A compiler translates it into machine code before it is run. The compiled program is generally much faster than its interpreted counterpart.

Editor – An editor, like a word processor, is for entering text into the computer. Programs are written with an editor before being turned over to a compiler or interpreter.

Genlock – Saves one video source to another (eg Amiga to video tape) synchronising their signals for mixes and other effects between the sources.

Multi-tasking – The computer's ability to run more than one program at once. In practice, only one program is run at a time, with the others waiting for their turn. The part of the Amiga's operating system called Exec handles the switching between programs, which is done so quickly that they all appear to be running simultaneously.

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MORE

continued from page 43

change my startup-sequence to the 1Mb listing you provided.

Upon boot-up a message was displayed: 'unable to find s:sys:prefs'. I examined the line causing the problem which, printed in your magazine, says: 'path ram: c: sys:utilities sys:system s:sys:prefs add'. I can only conclude that it is a misprint and that it should read 'path ram: c: sys:utilities sys:prefs add'. Please correct me if I am wrong, as this seems to work fine on my computer.

BA Cawthorne
Dereham
Norfolk

It's not quite a misprint, but a confusion arising from the restrictions of our column width. In fac, there should be a space between the 's:' and the 'sys:prefs'. The line should read:

path ram: c: sys:utilities ↵
sys:system s: sys:prefs add

This is because 's:' is a directory in its own right, and should be part of AmigaDOS's path. ***CR***

TWO FOR ONE



I have just purchased a scanner which has given me excellent results. The problem is that it and my printer both plug into the Amiga's parallel port. Is there a cable that I can buy that will enable 2 devices to be plugged into the port, or will I have to settle for another method?

Michael C
East Finchley
London

I am not aware of a splitter cable that will do the job of allowing 2 devices to plug into the parallel port. There are 2 types of power boxes which will do the job, available from various suppliers within the pages of this magazine. One is a straight 2-in/1-out box which will enable you to plug the 2 devices into the box and one lead out to the computer port. A switch on the front enables one input at a time. The other is an intelligent box which cues input from both devices and therefore no switching is necessary. ***MD***

TO PLOT, OR NOT



I can't locate a plotter driver (HPGL) which I can load into the Workbench. Could you tell me if such a driver exists? I have software (*Pro-Net* and *Pro-Board*) which has a driver for plotters, but I can't separate it to use with Workbench.

Is there a PD one I can obtain anywhere?

E Williams
Cumbria

Preferences sends bitmapped data to the printer. Plotters understand vector information, such as lines and arcs. There is no Preferences HPGL driver, since the 2 systems are incompatible.

It would be possible, however, to write a program which converts a picture into a series of coloured dots, each dot being plotted separately by a plotter pen of the right colour. It would be terribly slow, unbearably noisy and would wear out the pens, the plotter and your patience. ***SCR***

INNOCULATION



When I check my software for viruses through my *Virus Killer*, some of the disks return an "unknown bootblock" error. Could you explain what this means? Is there a virus on it? If there is, can I kill it or would I need another virus killer and which one would you recommend?

I have read the documents through but still don't understand, can you help to explain things more clearly.

I would appreciate any assistance you can give because, even though I check all my disks thoroughly, I am still nevertheless getting viruses.

Sharon Edwards
Herts

The public domain is the logical medium to look for solutions to the virus problem. With the advent of viruses becoming more cunning and treacherous than before, a cheap alternative to keeping-up with the latest virus can be found there.

A virus can attack from three different angles. It can attach itself to a file on disk and/or reside on the disk's initial tracks (the boot tracks or boot block), or change certain vectors inside the memory of the computer.

Vectors are important memory locations which are used by the computers ROM for its housekeeping routines. These vectors inform the computer to jump to a specific location to perform a required action. If the vector has been rewritten, then another routine address could be put in its place (a virus) before the requested jump takes place. It is important to note at this point that if the computer is switched off, then all vectors return to normal and the virus is removed, provided that the offending disk is not re-loaded. Any virus killer worth its salt, will check both disk and vectors and report its findings.

Some virus killers innoculate the disk; they write specific code to the disk's boot block and then re-read this information when it is loaded. If the code remains in place then all is well, if not, then a virus has infected the disk. The problem that this causes is that your virus checker will then discover that the boot block is irregular and reports the error as an "Unknown Bootblock."

A further complication is that many software houses insist on "copy protection", especially on games, which invariably means using a non-standard boot block to load the program. Many virus killers will mistake such a boot block for a virus. Allowing the virus killer to destroy this 'virus' will render the disk useless. Beware!

I prefer to use a utility to display the boot block. Many viruses can be discovered in this manner, simply looking for text such as "Something wonderful has happened!" or "lamer exterminator" and so on. If found, then with the above points in mind, kill the virus. This will clear the virus from disk. It is important to switch the computer off and re-boot, just in case the memory has been infected too! Once reloaded the virus should have disappeared.

Personally, I don't use the innoculation method, although many virus protection disks have methods of recognising this so-called anti-virus. I use a standard boot block, which all virus killers recognise as being standard and clean. Then if the disk does become infected, I can go to the CLI and install the disk again to clear the virus, thus reverting the disk to its original state. Your virus checker will also recognise this code and report that all is well.

I must stress that this should always be done with a back-up copy in case the disk will not reload. If you cannot make a back-up copy of the disk then the disk is copy protected and will not function after the virus has been killed anyway! If this is the case, then ask the software manufacturers for a new copy of the disk, otherwise you can use the disk but make sure to switch off after using it - the [Ctrl]-[Amiga]-[Amiga] reset sequence is not sufficient. ***MD***

FONT OF WISDOM



I recently purchased 5 PD disks of clip art. The documentation on the disks stated that the fonts could be loaded into *Deluxe Paint 2*. On trying this I get the message 'Can't load - not IFF file'. Can you help?

AH Mason
Margate
Kent

The fonts can be used by *DPaint*, but they can't be loaded in as would a picture. Instead, you must copy them across to a copy of your *DPaint* disk, placing them in the 'fonts:' directory. To do this, it's best to first copy a few Workbench commands into your RAM disk to save on disk swapping. Boot up with your Workbench disk, open the Shell and type:

```
copy c:copy ram:
copy c:makedir ram:
copy c:dir ram:
```

Now you can begin copying the files across. There are 2 parts to each font. The first part will be a file with the font's name followed by a full stop and the word 'font'. The second will be a directory, holding files whose names are numbers corresponding to the different point sizes available. All of these files must be copied across. Suppose that the font you were interested in is called BigLetters, and that it lives in the root directory of your clip art disk (you can find it by inserting the clip art disk and typing 'dir df0:'). Put the clip art disk in your drive and type:

```
copy df0:BigLetters.font ram:
makedir ram:BigLetters
copy df0:BigLetters ↵
ram:BigLetters all
```

Now put your copy of the *DPaint* disk in the drive and type:

```
copy ram:BigLetters.font ↵
df0:fonts
makedir df0:fonts/BigLetters
copy ram:BigLetters ↵
df0:fonts/BigLetters all
```

Repeat this process for each font. Once you have done all of your copying, you must run a program called 'FixFonts' to let the Amiga know that you have updated its fonts directory. To do this, first insert your Workbench disk and then type:

```
copy c:assign ram:
copy sys:system/FixFonts ram:
```

The put your *DPaint* disk in the drive and type:

```
assign fonts: df0:fonts
```

Because of the width of the columns, we occasionally have to break listings across two or more lines. Where this has occurred, and you should enter two or more lines without a [Return] between them, we have used the following symbol: ↵

```
fixfonts
assign fonts: sys:fonts
```

You will be asked to replace your Workbench disk. Once this is done, the fonts will be installed, ready for *Deluxe Paint* to use. All you have to do is select the [Load Font Dir] option from the Fonts menu when you are using the program. ***CR***

OOO, IT'S PEN PAL AGAIN



Could you please try to solve a problem I have encountered with my Amiga and the Canon BJ-10e bubble jet printer.

After buying *Pen Pal* (1.3, Rev 14) I rushed home to do some printing for our local fishing club. That's when my headaches began. The program is exactly what I need with a built-in database (ideal for working out the leagues) but it has an annoying habit of printing 5 to 7 zeros at the top of a page on both letters and database printouts.

If, when using the print requester I click on 4 copies, the first sheet has the zeros on but the next 3 do not. It also asks me to insert the next sheet when I click on Print in the requester, even though the printer is on-line and the paper is ready, and when I click on OK it sends the paper through blank.

I am printing in Letter Quality, single sheet, using the Canon 48 printer driver. The dip switch settings are 1 to 6 off, 7 to 10 on.

Please can you help as it is driving me nuts. I have no problems with dumps from *DPaint*, *QED* or other utilities which allow you to print, like *SID* and *ZeroVirus 3* to name but two.

Paul Younghusband
Fatfield
Tyne & Wear

Select Preferences/Program from the System menu and set Printer Paper Feed to Continuous. This gets rid of the 'Insert Next Sheet' requester, the initial blank page and the zeros at the top of the second page. I haven't got the faintest idea why this works, but it does. I suspect, because the printer driver works fine with everything else, that it's a tiny bug in *Pen Pal*.

Incidentally, the version I am using is *Pen Pal 1.3, Rev 18*. ***JW***

DEVELOPER'S DELAY

I followed your advice at the beginning of the *ADraw* series and applied to Commodore for the Native Developer's Update. I sent a money order for $20 to the address given on June 14, but have received no reply. A couple of weeks ago I sent a postcard enquiring about my order, but again there has been no reply. This is very frustrating as I only have PD compilers and these did not come with the necessary include files.

Have you heard of other orders which have taken as long as this, or should I be worried? Is there a Commodore address in the UK I can write to?

I have enclosed a copy of my original letter to CATS and hope you can help.

Dennis Jacobs
Moseley
Birmingham

Delays of 6-8 weeks are not uncommon when dealing with US companies, after all – you are dealing with 2 postal systems. A 4 month delay however would certainly suggest that your order has either gone astray or has been put on 'hold' for some reason (eg US header file prices may have changed recently). To be honest it would have been better to have ordered the header files from Commodore UK. The current price is £25 and when ordering the header files the address to use is:

Commodore Business Machines (UK) Ltd
Commodore-Amiga Technical Support
Bradbourn Drive
Tilbrook
Milton Keynes MK4 8AT

In your case things are complicated by the fact that you have already sent money to the US. I think the best thing to do is to contact Commodore's Maidenhead offices. If you write to Sharon Rodrigo at:

Commodore Business Machines (UK)
Commodore House
The Switchback
Gardner Road
Maidenhead
Berks SL6 7XA

and explain the situation I'm sure that she will be able to either chase your original order or make alternative arrangements for you. ***PAO***

VIRUS PROTECTION

I recently acquired *Master Virus Killer 2.2* from Amiganuts United. I installed it on my hard disk, but, when moving the icon to a better position, I inadvertently put it in the trashcan. I decided to trash it (as I got myself in a pickle) and re-install the program. I was then confronted with the message "makedir failed return code 20" and a message saying it already exists.

I have accessed DH0: with the dir command and have tried to delete the files and directory, but only one file was deleted before I was informed that the files cannot be deleted as they are protected.

How can I re-install *Master Virus Killer 2.2* on my hard disk again, without having to scrap everything on the disk and starting again? Please explain everything in plain, step by step English!

Miranda Lovell
Spalding
Lincs

Don't worry: the situation is far from catastrophic. Each file stored on a disk has an associated segment of information stored with it. This tells AmigaDOS such things as whether the file is an executable program, whether it is a script, whether it can be altered, and so forth. The item of information stored here which we're concerned with is what is known as the 'delete flag'.

The word 'flag' is computing terminology for something which can be either on or off. The purpose of a delete flag is to protect the flag from deletion. Before you delete the file, you must switch this flag on, so that deletion is enabled. This must be done for each file in turn:

```
protect FileName +D
```

The file can then be deleted in the normal way:

```
delete FileName
```

When you come to delete the files, bear in mind that all of the files in a directory must be deleted before AmigaDOS will let you delete the directory itself. Having done this, you'll be able to install *Master Virus Killer* as before. ***CR***

JARGON BUSTING • JARGON BUSTING

Bootblock – The first two sectors of an AmigaDOS disk located at track 1, side 0. The bootblock is used to describe the filing system in use and can contain a special program to 'boot' (load and execute from a reset) certain disks. This is how most simple viruses manage to work their way inside the system.

Font – The group of letters, numbers and special characters which comprise one variation of typeface, eg: 12pt Times, 12pt Times Bold, 12pt Times Italic. Sometimes (mistakenly) used in desktop publishing to refer to a type family.

MIDI – Musical Instrument Digital Interface is a standard devised by electronic instrument manufacturers, allowing a number of synthesisers to be controlled by a single keyboard or sequencer.

Startup-sequence – A program which is executed every time the Amiga is switched on and after every reset. It sets up the system so that it is usable from Workbench, and may be customised by those who have unusual hard or software requirements.

Virus – A small program that can lie hidden in memory or on a disk, duplicating itself on to any disks inserted in the machine, and generally causing havoc. There are many virus killers available in the public domain designed to deal with this menace.

ALL ABOUT MIDI



I am about to begin work on my final year project for a degree and intend to develop a music writing tool for song writers, using MIDI. I understand the theory about MIDI messages and I am learning C to write the software. The problem I am having is how to receive MIDI messages from the serial port in real time using C. Small routines which I have created to read the port (using SER:) have displayed various numbers which seem to have no relation to the expected messages. Also how do I get around the serial buffer?

I have looked at the MED source code for inspiration but MED uses assembly routines to handle the port. Learning assembly language to do this may be a bit adventurous considering the time available for the project. I appreciate that this subject may be answered in the new articles on MIDI but to be honest I can't afford to wait 5 months for such answers because my project needs to be complete by April. Can you help me out, or at least suggest a book which may help?

Victor Harris
Stafford

You've not given much detail about what you are trying to do but as far as getting the serial port handling sorted out I should be able to give you some useful advice.

Firstly, I do not like (and would not recommend that you use) the high-level 'SER:' orientated approach for collecting MIDI data. To my mind

it is not flexible enough to be able to provide sufficient control of the available serial port parameters.

The ideal way to obtain high-performance time-stamped MIDI collection is to hit the serial port hardware and CIA B timer directly using the low level system resource facilities. That will mean learning assembler, and getting involved with the Amiga interrupt system and, for the sort of project (and time scale) you are talking about, I doubt very much whether a move into such areas would be wise.

I'm sure that your best approach at the current time would be to open and use the serial device for collecting MIDI data. To date, I've written quite a lot of MIDI related code and one thing that has come to light is that the serial device itself is surprisingly efficient at collecting data even at MIDI speeds. Another thing is that many of the examples found in Amiga books and manuals are not only downright misleading, but they also do the serial device a grave injustice.

Because of this I'll work through the general 'serial device use' scenario in some detail...

Access to the Amiga's serial device entails some initial setting up to be done, including the creation of a reply port and an initialised I/O request block. In the case of the serial device this latter task involves the creation of an extended request block known as an IOExtSer structure. Once this has been done it is possible to open the serial device.

Before looking at some example code it is necessary to know a little about the user-definable fields present in the IOExtSer structure. Firstly, here is the structure layout that you will see defined in the devices/serial.h header file:

```
struct IOExtSer {
struct IOStdReq IOSer;
/* see RKM manuals for
details */
ULONG io_CtlChar;
/* control characters */
ULONG io_RBufLen;
/* serial port read buffer
length */
ULONG io_ExtFlags;
/* additional, extension,
flag set */
ULONG io_Baud;
/* baud rate of serial
transmission */
ULONG io_BrkTime;
/* duration of break signal*/
struct IOTArray io_TermArray;
/* terminal character set */
UBYTE io_ReadLen;
/* bits per read character */
UBYTE io_WriteLen;
/* bits per write character*/
UBYTE io_StopBits;
/* number of stop bits */
UBYTE io_SerFlags;
/* Serial Flag set */
UWORD io_Status;
/* see devices/serial.h for
details */
};
```

Most fields are set to reasonable default values by the OpenDevice() function so in general you'll only need to worry about actually setting a parameter if you need to use a value which is different to the default value. Baud rates over 19,200 need a few special tricks to ensure that data does not get lost and some special corner cutting provisions for MIDI data (which uses a 31,250 baud rate) are provided. One flag, SERF_RAD_BOOGIE, will force the serial device to use a high-speed mode which by-passes some of its internal data checking operations.

The serial device supports seven of the eight standard device commands – CMD_CLEAR, CMD_FLUSH, CMD_READ, CMD_RESET, CMD_START, CMD_STOP and CMD_WRITE. CMD_UPDATE is not documented in the official serial port literature and so should not be used. In addition to the standard device commands three device specific commands are offered:

SDCMD_BREAK
which is used to send a break signal (results in the serial line being held low for a user-defined, relatively long, period).

SDCMD_QUERY
This command returns a snapshot of the serial port's lines and registers. Details can be obtained from the RKM serial device autodocs.

SDCMD_SETPARAMS
enables the serial port parameters to be changed.

As far as using the serial device is concerned you will therefore be involved with these steps:

- Use CreatePort() to create a reply port for the device to send its messages to.
- Allocate and initialise a suitable device I/O request structure by using the CreateExtIO() function.
- Open the device using the OpenDevice() function.
- Use the device for as long as you need it.
- Close the device using the CloseDevice() function.
- Delete the I/O request structure using DeleteExtIO().
- Delete the reply port using DeletePort().

Reply port, I/O request block, and device opening and closing are straightforward and clearly discussed in the RKM manuals.

Most serial device parameters have to be set using DoIO() to execute the serial device's SDCMD_SETPARAMS command. Since this function call (like almost all Amiga library functions) can fail, I always test the result of the call – a typical code segment which sets the serial device to high-speed MIDI baud rate operation then might look like this:

```
case HIGH_SPEED_SERIAL1:
global_IO_req1_p->io_↵
RBufLen=SERIAL_BUFFER_SIZE;
global_IO_req1_p- ↵
>io_Baud=MIDI;
global_IO_req1_p- ↵
>io_ReadLen=8;
global_IO_req1_p- ↵
>io_WriteLen=8;
global_IO_req1_p- ↵
>io_StopBits=1;
global_IO_req1_p->io_↵
SerFlags|=SERF_RAD_BOOGIE;
global_IO_req1_p->io_↵
SerFlags &=~SERF_PARTY_ON;
global_IO_req1_p->IOSer.io_↵
Command=SDCMD_SETPARAMS;
if((DoIO(global_IO_req1_p↵
))!=NULL) {error_flag=TRUE;}
break;
```

With all of this done, and the serial device up and running, you can make requests for MIDI data.

To collect data in as 'near to real-time as possible' you need to be able to detect MIDI data as soon as it arrives at the serial port. The trouble is you'll probably also need to be monitoring other things at the same time (for example, Intuition menu events). Since you'll be waiting on signals from more than one port Exec's Wait() function will do the job.

The following discussion assumes that Intuition IDCMP facilities are being used as part and parcel of the program!

Prior to entering a Wait() loop I would post a synchronous request for one byte of serial data, as follows:

```
global_IO_req1_p- ↵
>IOSer.io_Length=1;
global_IO_req1_p- ↵
>IOSer.io_Command=CMD_READ;
SendIO(global_IO_req1_p);
```

This ensures that the event collection loop will be signalled as soon as the serial device picks up any MIDI data!

Here's the basic idea of the message collection scheme. The signal bits of both ports are obtained using this type of code:

```
intuimessage_signal=(1<< ↵
global_window_p->UserPort ↵
->mp_SigBit);
serial_signal=(1<<g_reply ↵
_port1_p->mp_SigBit);
```

this allows us to Wait() using a combined signal pattern like this:

```
signal=Wait(intuimessage_ ↵
signal|serial_signal);
```

When Wait() indicates the arrival of a signal we are going to need to know what type of message has arrived. You will need to check to see if a message is an IntuiMessage and arrange to handle such messages using this type of collection loop:

```
if(signal & intuimessage ↵
_signal)
   {
/* one (or more)
IntuiMessages have arrived.*/

   while(message=(struct ↵
IntuiMessage*)GetMsg(global_↵
window_p->UserPort))
     {
      class=message->Class;
      code=message->Code;
      ReplyMsg(message);
      switch (class) {
        case MENUPICK:
         item_number=↵
ITEMNUM(code);
           if (item_number==1)
              DoSomething();

/* exact event testing will
depend on what you are
actually doing */

            else
               global_exit_↵
flag=TRUE;
            break;
            default: break;
            }
       }
   }
```

The other signal that can occur is from the serial device, and you'll probably handle these type with a call to another module:

```
if(signal & serial_signal)
   {
   ReadSerial();
   }
```

The scenario to date, at least as far as the serial device is concerned, therefore goes something like this: By the time the program is visibly up and running, the serial device (plus associated reply port and I/O block) is not only ready and working but it has been asked to supply ONE character. The program, which has been put to sleep by Wait()ing on a combined signal set, is conceptually sitting in the main collection loop of the program expecting to be told about either serial port activity, menu activity or anything else that you have included in the signal mask.

As far as actually reading from the serial device is concerned, speed

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dictates that the Amiga's low-level functions are the best ones to use.

The first task is to collect, and use, that one byte of data which was requested synchronously:

```
WaitIO(global_IO_req1_p);
errorcode=global_IO_req1_p-↵
>IOSer.io_Error;
if(!errorcode) {
   AnalyseNextSerialByte(); }
```

At this point MIDI data may be coming in fast. There is NO point in trying to keep up with the MIDI stream using additional one byte I/O requests – the device request overhead will be too high and you end up paying for the approach by having a substantial amount of MIDI data queuing up in the serial device buffer. My advice is to accept the fact that, occasionally, you will get bursts of high-density data which will queue up in the buffer but minimize any cumulative effects by always collecting as much data as you can whilst you are reading from the device and do it using as few I/O requests as possible.

Having read that synchronously requested, one byte of data the trick is to use the SDCMP_QUERY command to see if any other serial data is currently available, like this:

```
global_IO_req1_p- ↵
>IOSer.io_Command=SDCMD_ ↵
QUERY;
DoIO(global_IO_req1_p);
```

If there is, then do another read to collect ALL of it. BeginIO() can be used here for speed.

```
if (global_IO_req1_p- ↵
>IOSer.io_Length=global_IO_ ↵
req1_p->IOSer.io_Actual)
   {
/* io_Length now set to
number of bytes in serial
buffer... */
   global_IO_req1_p- ↵
>IOSer.io_Command=CMD_READ;
   global_IO_req1_p- ↵
>IOSer.io_Flags=IOF_QUICK;
   BeginIO(global_IO_req1_p);
```

After such a read you will need to check to see if Quick I/O occurred like this:

```
if(global_IO_req1_p- ↵
>IOSer.io_Flags & IOF_QUICK)
```

and then collect any data that has been found using one of two loops (one handles the Quick I/O, the other handles the ordinary request situation which requires message handling).

The good news is that even with relatively high-density incoming MIDI data quite a bit of your serial I/O will occur using Quick I/O and this (as you'll see in the RKM manuals) by-passes the conventional I/O message orientated scheme).

Another sneaky trick will be needed at the end of the function which handles the processing of the serial data. Despite the fact that ALL of the serial data available (at that time) will have been processed you should post *another* synchronous request for one byte of data. Why? It's because as control returns to the main event handling loop (where the program may go to sleep) you'll again be in a position to wait for serial device signals, and any other signals, just as you were before the current serial data was collected.

If you put these ideas together the above arrangements produce a state whereby, however much MIDI data is collected, there will always be ONE unsatisfied serial I/O request when the program terminates. This must be aborted, using AbortIO(), as your program ends.

Obviously it's not possible to take a complete Intuition example on a line by line basis but hopefully the details given, coupled with the device notes you'll find in the RKM manuals, should provide a starting point. Good luck with your project! ***PAO***

CRAZY CRASHES

Please help me find out what is going wrong with my *PageSetter 2*. The problem is that after I have designed my page and want to print it out, I keep getting a Guru.

I've had this software for more than 12 months now and this is only just starting to happen. It does not matter whether I have one page or 20, when I try to print it Gurus, although not every time. This does not happen with my word processor or any other software.

KA Stacey
Bournemouth

The fact that this has only just started to happen is obvious proof that there is nothing wrong with *PageSetter 2*, otherwise it would have happened from the day you first started to use it.

My guess – and it's only a guess because you haven't given me any details about how much memory you've got, what printer you own, what printer driver you are using and what resolution your are trying to print – my guess is that you are using the wrong printer driver. Normally this will result in just garbage output, but sometimes it can cause the machine to crash.

If you've got an Epson compatible 9 pin printer use the EpsonX[CBM_MPS-1250] driver, if you've got an Epson compatible 24 pin printer use the EpsonQ or Nec_Pinwriter driver. ***JW***

COPY CONUNDRUM

I have been trying to master the basics of AmigaDOS. The one operation I have been trying is to swap programs (files) from one disk to another, so that I can make up various disks on specific subjects.

I bought the book *AmigaDOS Inside And Out*, even a second disk drive, but to no avail. According to the book and other publications, the command should be as follows:

```
copy df0:filename to
df1:filename
```

I have formatted two blank disks, renamed them, placed directories on them and tried to swap the directories between them. All I get is "Replace copy of Workbench in drive". Have instructions to be placed in RAM first? If so, could you please explain the reason.

P Blannin
Cirencester
Glos.

Every user operation in AmigaDOS is carried out by typing a command. 'Copy' is one of these. It is really a small program which must be loaded into the Amiga's memory and run before it can do its thing. This command, and many like it, are normally stored on the Workbench disk, which is why the Amiga asks you to replace the Workbench disk – it needs this disk so that it can get hold of the copy program.

The bits after 'copy' in the example command line that you gave refer to the source and destination of the copy – in other words, where the copy is to be taken from and where it is to be placed. Both df0: and df1: refer to disk drives, the internal drive and the expansion drive respectively. A problem arises because referring to df0: simply means 'whichever disk happens to be in drive 0 at the moment'. When you come to use the copy command, you are first asked to insert the Workbench disk. Copy then attempts to find 'filename' on the disk in drive zero, the wrong disk.

There are 2 ways to avoid this particular problem.

The first, as you mention, is to place any needed commands from the Workbench disk into RAM. With the Workbench disk in drive zero, type:

```
copy c:copy ram:
```

This makes a copy of the copy command and puts it in your RAM disk (which acts just like a disk drive except that it loses everything when the machine is switched off). Now, because the Amiga can find the copy command in RAM:, it has no need of the Workbench disk, and you can use the command line that you were trying before.

The other method is to refer to your disks by name. I'll assume that you have called your disks 'DiskOne' and 'DiskTwo'. The copy could then be done by:

```
copy DiskOne:filename to ↵
DiskTwo:filename
```

In this case, you will still be asked to insert the Workbench disk so that the copy command can be loaded, but afterwards you will be asked to insert DiskOne (and then DiskTwo). Referring to disks by name is the best way to go about things, because then you can be sure exactly which disks are being used. Note that the name must be followed by a colon (:) when referred to from the Shell.

A complication may arise if you've included spaces in your disk names (which is a good reason to avoid doing so). AmigaDOS uses spaces to separate different parts, so you must let it know that the spaces within a disk or filename are not separators but part of that name. This is done by enclosing the whole thing (disk name, directory names, and filename) in quotes:

```
copy "Disk One:A ↵
directory/filename" to ↵
```

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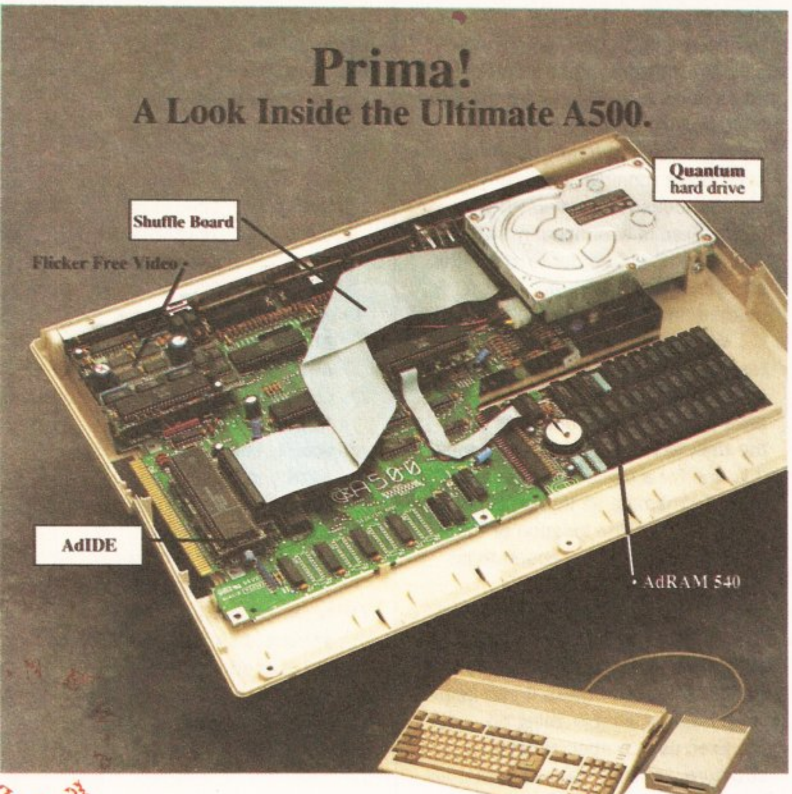
JARGON BUSTING • JARGON BUSTING

AmigaDOS – The most basic part of the Amiga's operating system - the collection of programs that take care of the general running of the machine. AmigaDOS concerns itself with device-handling: control of the keyboard, basic screen output, disk drives, printers and so on.

Directory – An organisational method of storing files on a disk in a heirarchy. A directory is a sub-section of a disk which may contain files and/or further directories. In this way, similar files can be grouped together.

Guru – A message from the Amiga system saying that a fatal error has occurred. The message appears in a large, flashing red box and includes two numbers which are of use to programmers trying to ascertain why their programs have failed.

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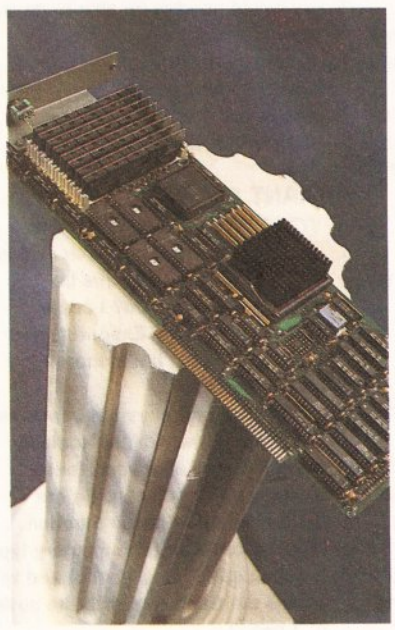


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"Disk Two/Another directory/filename"
CR

ESCAPE FROM SCRIBBLE!

I have an Amiga 500, a Star LC-200 printer and use the *Scribble!* Platinum software, version 3.02. The printer preferences are set to EpsonX[CBM _MPS-1250].

I have tried unsuccessfully to activate the printer escape codes as described in the printer manual and the Amiga Users' Manual, and have come to the conclusion that I have a complete blind spot with regard to activating these codes and using the [Esc] key.

I would be obliged if you would talk me through the following example so that I might achieve the desired result and apply the insight gained to other commands for other effects. On page 53 of the Star manual there is a table giving printer control commands for achieving double and quadruple size characters. It has the ASCII code ESC "h" n, where n is 1 for double size and 2 for quadruple.

Assuming I am producing a screen of normal text, exactly where, when and how can I enter this command to change part of the text to print as double or quadruple size, and then return to normal size text for the remainder of the document? Whenever I attempt to depress the [Esc] key the cursor simply jumps back to the beginning of the line.

IP Turner
Peterborough

Scribble! won't allow you to send the code for double or quadruple height characters, the reason for which I'll come to in a moment. Firstly let's use the nearest code we *can* send as an example, the one for 'expanded' characters, which means double width.

Now, the codes you give to *Scribble!* are not printer specific control codes, they are ANSI X3.64 style commands; you'll find a list of these in the back of your Amiga manual – Appendix D, Printer Escape Codes. Looking down the list we find that the codes for enlarged text are ESC[6w for on and ESC[5w for off. (Your manual may have a misprint in it where the [before the 6 is missing in the code for on.)

These are the 2 codes we need to give to *Scribble!* as embedded printer commands to enable and disable that style of text. When you print the document the printer driver will translate these ANSI style commands in to the correct control codes for that specific printer.

The neatest place to define your embedded printer commands is right at the top of your document, so on the first 2 lines type:

```
.#0/0=^[[5w
.#1/0=^[[6w
```

The ^[part of the command is the ESC code you've been hunting for. (The ^ character (circumflex) is typed by holding down [Shift] and pressing the [6] key.)

To actually embed the printer commands into the text, make sure you are in Insert editing mode, move the cursor on to the first character of the word or group of words that you want in expanded style, hold down [Left Amiga] and press [G]. You should get a copyright symbol on the screen – that's a sort of rectangle with a little 'c' in it. Now press the [1] key.

Now move the cursor to the space just after the last word you want in expanded style, hold down [Left Amiga] and press [G] to get that copyright symbol again, then press [0].

So what you should see on-screen is something like this:

```
©1some text©0
```

The first code switches on expanded text, the second code switches it off again.

The reason why *Scribble!* can't send the code for double or quadruple height characters is that there isn't an ANSI X3.64 style command for it. To achieve this style you would need to be able to do is send specific printer control commands instead of ANSI ones, something that among Amiga word processors only *Protext* and *WordPerfect* can do. ***JW***

GIANT STACKS

How can a process know its stack size and how can this be modified? I could achieve this using Execute() and Stack but would like a more efficient way.

The second question concerns the heap on the Amiga. Normally every memory allocation takes memory from the heap. On the Amiga the AllocMem() function requires details of the memory type required (chip, fast, public) and this seems contradictory with the notion of a heap?

Jean-Pierre Riviere
Paris
France

Ordinary programs run as AmigaDOS 'Processes', but to give a decent answer to your stack queries I think it's worthwhile looking at both AmigaDOS Processes and the associated Exec Tasks – if nothing else it will explain what commands like STACK are actually doing.

I'll start with the Exec task because this is the cornerstone of the Amiga's multi-tasking arrangements. A task is an Exec concept which refers to a particular piece of code running under the Exec multi-tasking system. As you will already know there may be many such tasks running 'apparently simultaneously' in memory but in reality Exec is continuously switching between tasks in order to share the processor time out in a suitable fashion.

When Exec decides to stop a task from running (in order to give some other task a chance) it has to save sufficient information to allow the task to be started the next time it is due for a piece of processor time. To manage all this magic Exec needs not just the location of the piece of code it is supposed to be running but it needs to know whereabouts in memory its stack is. What's more it needs somewhere to store this information so that as it switches between tasks it can itself keep track of what is going on.

Exec uses a special data structure, called a 'task control block' or 'task control structure', to store this information. This structure is called a 'Task' (note the capital T) whereas a task (in the non data structure sense of the word) is a piece of code running under Exec's multi-tasking environment – this latter object includes the program and its associated data storage areas (including its stack), plus the Task control block needed by Exec to run the program in the multi-tasking environment.

The Task structure itself, as one might imagine, is quite a complex beast. The C definition is found in exec/tasks.h and, from the point of view of answering your stack questions, it's quite instructive to look at, and comment on, some of the fields that are present. Firstly, here is the structure definition itself:

```
struct Task {

   struct Node tc_Node;
   UBYTE  tc_Flags;
   UBYTE  tc_State;
   BYTE   tc_IDNestCnt;
/* counter for Disable()
nesting */
   BYTE   tc_TDNestCnt;
/* counter for Forbid()
nesting */
   ULONG  tc_SigAlloc;
/* signals allocated */
   ULONG  tc_SigWait;
/* signals we are
waiting for */
   ULONG  tc_SigRecvd;
/* signals we have
received */
   ULONG  tc_SigExcept;
   UWORD  tc_TrapAlloc;
   UWORD  tc_TrapAble;
   APTR   tc_ExceptData;
   APTR   tc_ExceptCode;
   APTR   tc_TrapData;
   APTR   tc_TrapCode;
   APTR   tc_SPReg;
/* task's stack pointer */
   APTR   tc_SPLower;
/* stack lower bound */
   APTR   tc_SPUpper;
/* stack upper bound */
   VOID   (*tc_Switch)();
/* task losing CPU */
   VOID   (*tc_Launch)();
/* task getting CPU */
   struct List tc_MemEntry;
/* allocated memory */
   APTR   tc_UserData;
/* pointer to task data */

};
```

There is a lot of data but, with a bit of help, it's not hard to start finding your way around: The tc_SPReg field is a temporary storage area for the task's stack pointer. The tc_SPUpper and tc_SPLower fields define the task's stack area.

One thing you will not find in the above structure are fields which look as though they are meant to hold the processor registers (stored when Exec suspends the task). Why? Because there aren't any. Exec does store these values (it has to otherwise it couldn't re-instate them when the task is allowed to run)... but it doesn't store them in the Task structure; it pushes the values on to the task stack.

If a task is kicked off by you, ie using say the CreateTask() support function, then you will be able to control this stack size by supplying a suitable stacksize parameter (see RKM autodocs for function details). The trouble is that, since any real applications programs that you write will be started off as Processes, the

continued on page 62

JARGON BUSTING • JARGON BUSTING

Escape codes – A means of sending a printer formatting instructions embedded in an ASCII text file.

Stack – A method of grouping data together. Each item of data is placed on top of the previous one entered in the stack. Data can only be removed from the top. It's rather like stacking a pile of dinner plates.

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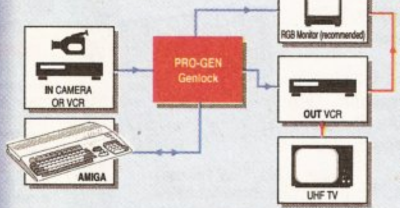
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-Supplied With Genlock Extender Cable Worth £9.95
-Switch-box Switches Between Foreground, Background, Video And Computer Modes.

£29.95

Finance terms are available (subject to status) for most products; please see our ordering panel at the end of this advert for full details

AMIGA STORAGE DEVICES

Commodore A590 20Mb HD

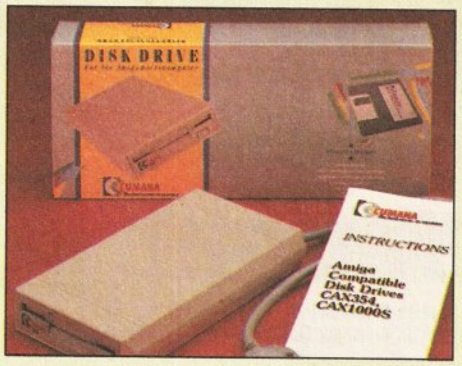
Features Include

- ☆ Connects to sidecar bus on left hand side of Amiga A500
- ☆ Autoboots with Kickstart 1.3
- ☆ Sockets For Up to 2 Mb of RAM
- ☆ DMA Access
- ☆ External SCSI Port
- ☆ Complete With Power Supply

A590 Hard Disk Including 512K RAM Only **£299.95**

A590 Hard Disk Including 1 Mb. RAM Only **£319.95**

A590 Hard Disk Including 2 Mb. RAM Only **£349.95**



Cumana CAX354 3.5" External 2nd Disk Drive.

- ☆ Features Include
- ☆ Long connecting cable
- ☆ 1Mb, (880K Formatted) Capacity
- ☆ Enable/Disable Switch,
- ☆ Throughport
- ☆ Access Light
- ☆ Compatible with Amiga 500/1000/1500/2000/3000 and CDTV

£57.95

SUPRA 500XP 52-105Mb HARD DISK DRIVE WITH MEMORY EXPANSION UP TO 8Mb.

Features Include:

- ☆ Capacities of 52/80/105Mb available
- ☆ Connects to sidecar bus on L/H side of Amiga A500
- ☆ Autoboots with Kickstart 1.3, boot enable/disable switch
- ☆ Sockets for up to 8 Mb of FASTRAM with enable/disable switch
- ☆ Autoboots With Kickstart 1.3
- ☆ SCSI Port & Amiga bus pass thru allows other devices to be connected
- ☆ Includes Express Copy hard drive Back-up Software
- ☆ The 52 Mb version powered by your Amiga (High Current Power Supply is only optional).

*High Current Power Supply is required for 80Mb. and 105 Mb versions. Only... **£49.95**

SUPRA PRICES

RAM SIZE	STORAGE CAPACITY 52Mb.	80Mb.	105Mb.
1Mb.	£479.95	*£539.95	*£629.95
2Mb.	£499.95	*£569.95	*£649.95
4Mb.	£699.95	*£749.95	*£849.95
8Mb.	£899.95	*949.95	*1049.95

**Please don't forget to add the cost of Power Supply when calculating price of 80/105Mb. drives*

EDUCATION SOFTWARE

DON'T JUST PLAY GAMES WHEN YOU CAN LEARN WITH YOUR AMIGA TOO!

PRIMARY MATHS COURSE - Ages 3 to 12, Complete 24 Programme Course. **£21.95**

BETTER MATHS - Ages 12 to 16, Higher level to Linear & Quadratic Equations. **£21.95**

MICRO MATHS - 24 easy to use programs for GCSE ('O' Level) revision or self tuition **£21.95**

MEGA MATHS - A 9 level step by step tuition course. For mature beginners, 'A' Level studies & Micro Maths users **£21.95**

MICRO FRENCH - GCSE French tuition or revision course. Covers both spoken & written French **£21.95**

MICRO ENGLISH - A complete programe of self-tuition up to GCSE standard **£21.95**

THE THREE BEARS - Ages 5 -10, Develops imaginative thought/reading skills. **£22.95**

SPELL BOOK - Ages 4 to 6, Developed with the help of a Primary School Head Teacher to aid spelling skills. **£17.95**

PLAY AND READ - Ages 4 to 9, The complete reading tutor. Part 2 teaches spelling to the beginner at reading. **£18.95**

AMIGA PERIPHERAL PACKS

TWO GREAT PACKAGES THAT SAVE YOU MORE MONEY!

These two packs are aimed at the user who needs to get a great deal from his Amiga. A superb quality monitor, the PHILIPS CM8833/II has been put with your choice of either the CITIZEN SWIFT9 or the CITIZEN SWIFT 24 printer. You choose, but whichever combination you have the price has been designed to SAVE YOU MONEY. Buying together will save you £££'s!

PERIPHERAL PACK 1-CM8833/II + Citizen Swift 9

Only... **£469.95** With a FREE PEN PAL worth £79.95

PERIPHERAL PACK 2 -CM8833 + Citizen Swift 24E

Only... **£569.95** With a FREE PEN PAL worth £79.95

AMIGA SOFTWARE

Music-X: The ultimate software for professional MIDI sequencing. The software includes a configurable librarian and a synthesiser patch editor. All you need to recreate a song can be recalled from one performance file including sequences, MIDI routing, sync setup, keyboard maps & synthesiser or drum machine patch libraries. **NEW LOW PRICES - £54.95 or just £74.95 with midi-interface!**

MIDI INTERFACE (5 Port): In, Out, Through plus 2 switchable thru'/out. Includes cable. **£24.95**

AMOS: AMOS allows you to access the power of the Amiga with ease. 500 different commands make AMOS a sophisticated development language. The AMOS animation language allows you to create complex animation sequences. 300 page manual and over 80 example programs **£49.95**

Amos Add on Modules: (BOTH require Amos prog.)
Amos Compiler — Amos 3D — BUY ALL THREE AMOS PROGRAMS FOR JUST **£89.95**

SuperBase 4: Most powerful database available for the Amiga.Combines the ease of use of Super-Base 2 with a versatile programming language so that you can tailor your data to your own specific needs for club/business/library records etc. **£229.95**

Lattice C: An ideal tool for the C programmer whether experienced or a novice. The best way to create applications for the Amiga.Fully supports Motorola chipset. Nearly 300 functions optimised to help the user write the tightest possible code. Includes screen editor. Most Amiga C books are based around lattice. (Requires either 2 floppy drives OR a hard disk drive) **£199.95**

Deluxe Paint IV: Latest version of the Amigas first, and still the best, paint and animation package, now including HAM mode. (1 Mb. minimum memory or more recommended) **£79.95**

Vidi, The Complete Colour Solution: Vidi with RGB Splitter, Frame Grabber & Digitiser. Grabs moving colour video into 16 grey scale frames (up to 16 frames in 1Mb. Amiga) and digitises from still colour video source in up to 4096 colours in less than 1 second! Requires home VCR or video camera for grabbing. Requires video camera or VCR with perfect pause for digitising. Now comes with Spectracolor FREE!!! **£179.95**

MASTERSOUND: High quality "mono" sampler (best for sampling instruments etc.) **£36.95**

THE ABOVE IS JUST A SMALL SAMPLE FROM OUR EXTENSIVE RANGE OF THOUSANDS OF SERIOUS, EDUCATION AND RECREATION TITLES.WE CAN'T LIST THEM ALL HERE SO PLEASE CALL US IF YOU CAN'T SEE THE PROGRAM YOU REQUIRE, IT'S PROBABLY IN STOCK!

Pen Pal V.1.3

WORD PROCESSOR/DATABASE

With Pen Pal you can mix text, 4096 colour graphics & data in ways no other w/p can! "It's handling of graphics is unsurpassed: Pen Pal is the only word processor I tested that will automatically wrap text round graphics..

Amiga World, July '90



£79.95

PEN PAL Vers 1.3 WITH 512K Amiga RAM Expansion only...£99.95!

If you're thinking about presents why not buy a Harwoods Gift Voucher (all values available).

Enquiries & Order Line: **0773 836781**

Finance Facilities Available*

Please phone us for information and your personal application pack.

VISA — Access

GORDON HARWOOD HARWOOD HARWOOD Computers

ALFRETON DERBYSHIRE

The Closer you look, The Better we look.

**Finance terms are available (subject to status) for most products: please see our ordering panel at the end of this advert for full details*

FREE... Fully Tailored Dust Cover with all Dot Matrix Printers

PRINTERS

NEW LOWER PRICES!!!

All printers in our range include the following standard features...

- ☆ Standard Centronics parallel port unless otherwise stated for direct connection to Amiga, PC's, ST etc. and come with a:
- ☆ FREE CONNECTOR LEAD & A FREE TAILORED DUST COVER!



When you are comparing our prices to others make sure that the same essential items are included eg. Printer Lead, Dust Cover, Postage and VAT etc.

CITIZEN 120D+ 9 PIN MONO - Up to 120/25 cps — £149.95

- Very reliable low cost printer with interchangable interfaces for Centronics/RS232/serial type (C64 etc.)
- Full 2 Year manufacturers warranty

NEW FASTER STAR LC20 9 PIN MONO - Up to 150/38 cps — £159.95

Replacement for our most popular Mono Dot-Matrix at a super low price

- Multiple font options easily accessible from front panel
- Excellent paper handling facilities
- Simultaneous, continuous and single sheet stationery
- 240 x 240 dpi Graphics

CITIZEN 124D 24 PIN MONO - 120/40 cps — £199.95

- 360 dpi - 24 Pin MONO with 3 Fonts
- 8K Buffer - Expandable to 32K
- 3 Fonts, Superb letter quality
- Full 2 Year Warranty
- Feed for labels & multi-part stationery
- Complete paper parking facilities.

STAR LC 24/10 24 PIN MONO - 150/50 cps — £214.95

24 Pin version of the Star LC Series with

- Exceptional letter print quality
- 360 x 360 dpi Graphics
- Additional font cartridges available
- 8 resident fonts

STAR LC200 9 PIN COLOUR PRINTER - 185/40 cps — £209.95

This is the one in our packs!

- 80 Column Dot Matrix
- 240 dpi - 9 Pin COLOUR
- 16K Buffer, 8 Resident Fonts
- Push/pull tractor & rear/bottom feeds
- Reverse paper feeds
- Micro paper feed, Max. paper width 11.7"
- Supplied with colour & mono ribbons
- Paper park with auto single sheet loading
- Programmable from front panel.
- 12 month warranty

CITIZEN SWIFT 9 PIN COLOUR - 160/40cps — £219.95

New super high spec 9Pin colour printer

- 8K Buffer 4 Fonts
- Push and pull tractor built-in
- Feed for labels/multi part stationery
- 240 x 240 dpi Colour Graphics
- Best text quality in our 9Pin range
- 2 Year Citizen warranty

STAR LC24/200 24 PIN MONO - 220/55 cps — £249.95

New Star 24 pin that means business!

- 80 Column Dot Matrix
- 360 dpi - 24 Pin MONO
- 7K Buffer expandable to 39K
- 10 Resident Fonts
- Front Panel Pitch Selection
- Push/pull tractor & rear/bottom feeds
- Reverse paper feed
- Paper park with auto single sheet loading
- Micro paper feed, Max. paper width 11.7"
- Supplied with mono ribbon
- Faster than the old LC24-10
- Extra font cartridges available
- Program from front panel, No DIP switches
- 12 month warranty

STAR LC24/200 24 PIN COLOUR - 220/55 cps — £299.95

Colour version of the LC24-200 Mono but with expandable 30K Buffer.

NEW 24 Pin CITIZEN 224 COLOUR - 160/53 cps — £259.95

Brand New, lowest cost colour 24 Pin printer, anywhere!

- 80 Column Dot Matrix with 4 Fonts
- 360 dpi - 24 Pin COLOUR
- 8K Buffer expandable to 32K
- Easy to use front panel controls
- Push & pull tractor feeds
- Complete paper parking facilities.
- Supplied with mono & colour ribbons
- Full 2 Year Citizen Warranty

NEW 24 Pin CITIZEN SWIFT 24E COLOUR - 180/60 cps — £319.95

Brand New, superb specification colour 24 Pin printer.

- 80 Column Dot Matrix with 7 Fonts
- 360 dpi - 24 Pin COLOUR
- 8K Buffer expandable to 32K
- Easy to use LCD panel controls
- Push/pull & bottom tractor feeds
- Complete paper parking facilities.
- Supplied with mono & colour ribbons
- Full 2 Year Citizen Warranty

CITIZEN SWIFT 24 PIN COLOUR - 160/50 cps — Phone for very special prices!

The ever popular "European Printer of the Year 1990", fully featured 24 Pin colour printer which of course comes with Citizens 2 Year Warranty.

NEW FASTER STAR XB 24 PIN COLOUR RANGE XB24-200 & XB24-250 - 275/80 cps

£399.95 24-200 Colour

Wide Carriage £499.95 24-250 Colour

These NEW top of the range Stars replace the XB24/10 & XB24/15, & offer the best possible quality dot matrix printing

- Exceptional print quality
- 4 x 48Pin super letter quality fonts
- 14 x 24Pin near letter quality fonts
- Buffer: 29K(XB24/200) & 76K (XB 24/250)
- 360 x 360 dpi Colour Graphics
- 12mths on-site warranty (UK Mainland)

HEWLETT PACKARD PAINTJET COLOUR A4 INKJET — £899.95

Our best quality full colour printer at a realistic price

- Parallel/Centronics or Serial RS232 I/F (specify with order, MAC option available)
- For presentation graphics/DTP, CAD and technical/scientific applications
- A full page of colour graphics in 4 minutes (typical)
- Non impact printing, virtually silent, 43dba
- Will print transparencies
- 12 Months on-site warranty (UK Mainland)

STAR LASERPRINTER 4 - 4ppm MONO LASER — New! £749.95

A4 Laser Printer, will connect to PC, Amiga, Atari ST etc.

- 300 DPI, 1Mb. Upgradable to 5Mb.
- Emulations inc: HP Series II, Epson EX800, IBM Proprinter & Diablo 630
- Serial & Parallel Interfaces
- 12month on site warranty (UK Mainland)
- Every desktop publishers dream

STARSCRIPT - 4ppm POSTSCRIPT COMPATIBLE LASER — New! £1099.95

A4 Laser Printer, will connect to PC, Amiga, Atari ST & Apple Macintosh

- As the LASERPRINTER 4 but with Starscript and 2Mb Memory, 49 Fonts and Appletalk.

SEE OUR LIST OF ACCESSORIES FOR BOTH STAR AND CITIZEN PRINTERS, ALL AT COMPETITIVE PRICES!

All the characters Per Second speeds quoted above are Draft/LQ at 10cpi

PRINTER ACCESSORIES

CITIZEN PRINTER ACCESSORIES:

Citizen 120D+ Sheet Feeder	£69.95
Citizen 120D+ Parallel Interface	£49.95
Citizen 120D+ CBM C64 Serial Interface	£49.95
Citizen 124D 32K Buffer	£13.95
Citizen 124D Semi-Auto SheetFeeder	£39.95
Citizen 124D Automatic Sheet Feeder	£79.95
Citizen 124D Printer Stand	£24.95
Citizen Swift 9 Semi-Auto SheetFeeder	£39.95
Citizen Swift 9 Automatic Sheet Feeder	£79.95
Citizen Swift 9 Printer Stand	£24.95
Citizen Swift 9X Printer Stand	£34.95
Citizen Swift 9X Automatic Sheet Feeder	£139.95
Citizen Swift 24 32K Printer Buffer	£13.95
Citizen Swift 24 Semi-Auto Sheet Feeder	£39.95
Citizen Swift 24 Automatic Sheet Feeder	£79.95
Citizen Swift 24 Printer Stand	£24.95
Citizen Swift 24X Auto Sheet Feeder	£139.95
Citizen Swift 24X Printer Stand	£34.95

HEWLETT PACKARD PAINTJET PRINTER ACCESSORIES:

Hewlett Packard PaintJet	
Black Ink cartridge	£25.95
Colour Ink Cartridge	£31.49
Single Sheet Printer Paper	£17.95
Z-Fold Printer Paper	£15.95
Transparency Paper: Pack of 50 Sheets	£52.95

STAR PRINTER ACCESSORIES:

Star LC-20 Mono Printer	
Automatic SheetFeeder	£74.95
Star LC24-10 Mono Printer	
32K Buffer £67.95	£67.95
Automatic SheetFeeder	£74.95
Star LC-200 Colour Printer	
Automatic SheetFeeder	£74.95
Star LC 24-200 Mono Printer	
32K Printer Buffer	£34.95
Automatic SheetFeeder	£74.95
Star LC 24-200 Colour Printer	
32K Printer Buffer	£34.95
Automatic SheetFeeder	£34.95
Star XB 24-200 Colour Printer	
Pull Tractor	£34.95
Font Cartridges - Styles To Be Announced	£29.95
128K Centronics Printer Buffer	£89.95
Automatic SheetFeeder	£114.95
Dual Bin SheetFeeder	£429.95
Star XB 24-250 Colour Printer	
Pull Tractor	£34.95
Font Cartridges - Styles To Be Announced	£29.95
128K Centronics Printer Buffer	£89.95
Automatic SheetFeeder	£174.95
Dual Bin SheetFeeder	£469.95

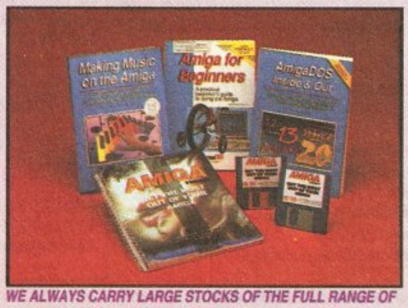


GENUINE CITIZEN & STAR REPLACEMENT PRINTER RIBBONS

PRINTER	PRINTER TYPE	BLACK RIBBON	BLACK RIBBON 'SIX PACK'	COLOUR RIBBON	COLOUR RIBBON 'SIX PACK'
CITIZEN 120D+	BLACK ONLY	£4.95	£24.95	N/A	N/A
CITIZEN 124	BLACK ONLY	£4.95	£24.95	N/A	N/A
CITIZEN SWIFT 9	BLACK/COLOUR	£4.95	£24.95	£16.95	£99.95
SWIFT 24/24E/224	BLACK/COLOUR	£4.95	£24.95	£16.95	£99.95
STAR LC10/20	BLACK/COLOUR	£4.95	£24.95	£6.90	£36.50
STAR LC200	BLACK/COLOUR	£6.95 ZX9	£36.95 ZX9	£12.95 ZX9CL	£69.95 ZX9CL
STAR LC24/200	BLACK/COLOUR	£8.95 Z24	£49.95 Z24	£14.95 X24CL	£74.95 X24CL
STAR XB RANGE	BLACK/COLOUR	£8.95 Z24	£49.95 Z24	£14.95 X24CL	£74.95 X24CL

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FOR BEGINNERS & EXPERTS ALIKE



WE ALWAYS CARRY LARGE STOCKS OF THE FULL RANGE OF ABACUS & OTHER BOOKS...Phone us for details!

AMIGA FOR BEGINNERS - VOL. 1 ABACUS BOOKS, £12.95
From unpacking your Amiga to creating your own icons, includes first use of basic and extras disk.

AMIGA BASIC INSIDE AND OUT - VOL 2 ABACUS BOOKS, £18.95
Definitive step by step guide to programming Amiga's in basic.

AMIGA MACHINE LANGUAGE - VOL 4 ABACUS BOOKS, £14.95
Practical guide to learning 68000 assembler language.

AMIGA DOS INSIDE AND OUT - VOL 8 ABACUS BOOKS, £18.45
Guide to Amiga DOS & CLI. NEW Edition inc. DOS v 2.0

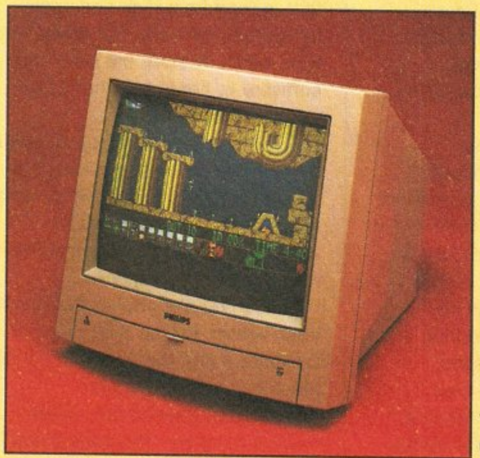
AMIGA HARDWARE REFERENCE MANUAL-Addison Wesley, £21.95
Written by technical experts at Commodore Amiga Inc, USA... People who designed your Amiga. Hardware level machine code programming at advanced level.

AMIGA, BEST OF TRICKS & TIPS Vol. 17, £32.95
A complete set of tricks and tips that enable you to do MORE with your Amiga and as simply as possible.

**Credit terms are available (subject to status) for most products; see our ordering panel at the end of this advert for full details*

MONITORS & MONITOR TV's

Harwoods stock a complete range of both Monitors & Monitor TV's to give you your perfect solution to the type of display to buy.



PHILIPS CM8833/II
Stereo High Resolution Colour Monitor

NOW WITH FREE...F19 STEALTH FIGHTER!!!

The ever popular 14-inch Philips CM 8833 MkII, is the most versatile multipurpose colour monitor available. Its versatility means you not only get excellent colour graphics & text performance with a wide range of personal computers, but when connected to a VCR or optional tuner, you get an amazing 600 pixel TV picture. It's this 600 pixel resolution, that makes the 8833 essential for the serious user who wants to use his computer for text based applications. With the 8833 MkII, Harwoods give you the complete set up, to get you going straight away... Monitor, RGB picture and Stereo Audio Cables, Tailored dust cover, a full 12 Months on site service warranty, and inclusive of a FREE Superb F19 Stealth Fighter Game!!!

☆RGB/AD, TTL, Composite. Video & stereo audio inputs Can be used as a TV with VCR or Tuner Also as a Video Camera display monitor Retractable stand ☆Twin Stereo Speakers Headphone Jack Socket FREElead for your computer FREE 12 Month on site service warranty.

THE MOST VERSATILE STEREO COLOUR MONITOR AVAILABLE **£249.95**

CBM 1084S STEREO COLOUR MONITOR. Commodore's Own Stereo High Resolution Colour Monitor with... RGB/AI/TTL, Composite. Video/Audio Inputs Can be used as TV with VCR or tuner. Twin Speakers for stereo output Supplied with cables for A500, CGA PC,\C16-64-128. **£269.95**

PHILIPS TV TUNER. ALLOWS ANY MONITOR WITH COMPOSITE VIDEO & AUDIO INPUTS TO BE USED AS A TELEVISION. SUPPLIED COMPLETE WITH AERIAL FOR USE INDOORS ALSO HAS STD EXTERNAL AERIAL SOCKET AND COMPATIBLE WITH MOST MONITORS INC. PHILIPS CM8833 MK I & II, CBM 1081/4, & 1900/1/2. **£79.95**

It's important to remember that most TV Monitors, are still first and foremost televisions, meaning that their average 400 pixel tube display 50% lower resolution than a monitor) cannot be guaranteed to display 80 column text clearly without risking eye strain. If choosing a Television Monitor ensure it has the latest 2000 character tube capability, meaning it can handle the Amigas' 80 characters, by 25 line output clearly.

NEW!!! PHILIPS 15" TELETEXT REMOTE CONTROL 40 CHANNEL MONITOR TV. BRAND NEW SUPERB DEFINITION PHILIPS MONITOR TV. IDEAL FOR AMIGA OR CDTV USERS, GIVING FOR THE FIRST TIME TRUE MONITOR QUALITY FROM A FULL FEATURE TELETEXT TV AT AN AFFORDABLE PRICE!!!. JUST LOOK AT THE FEATURES... Direct Scart Connector for Amiga, CDTV, VCR OR SATELLITE RECEIVER RGB/AD, Composite Video & audio inputs FULL TELETEXT FACILITIES (FOR THIS FACILITY EXTERNAL AERIAL SHOULD BE USED) Headphone Jack Socket FULL TWO YEAR GUARANTEE ☆2000 CHARACTER HIGH DEFINITION FST TUBE SUPPLIED WITH LOOP AERIAL REMOTE CONTROL ☆FREE lead for YOUR computer

ONLY... **£279.95**

IF YOU WOULD LIKE THE MONITOR TV IN OUR PACKS 2, 3, POWERPRO OR WITH ONE OF OUR PERIPHERAL PACKS TO REPLACE THE 8833, PLEASE SIMPLY ADD £20.00 AND STATE YOUR PREFERENCE WHEN ORDERING.

AMIGA ACCESSORIES

KCS POWERBOARD IBM PC EMULATOR ☆Hercules, CGA & Monochrome Video Support, **£219.95**
Supports Both 3.5 Inch & 5.25 Inch Diskettes, Fits Into A501 RAM Slot, 8088 XT Processor, Clock/Calendar Included, Acts As 512K RAM Exp. When In Amiga Mode, Includes MS-DOS 4.01, Shell & GW-BASIC, Supports A590 Hard Drive, Mouse Driver Software Included.

MEMORY EXPANSIONS

HARWOODS PRO-RAMPACK **£29.95**
512K Memory Expansion for Amiga A500 series that simply plugs in! Fully compatible, On/Off switch and real time battery backed clock.

SUPRARAM RX 500 (512K to 8Mb. RAM Expansion)
The RAM expansion giving massive memory WITHOUT dismantling your Amiga, thus avoiding the possibility of invalidating your warranty. Easily connects to sidecar with bus 'pass-through' for HD's etc.

512K RAM Version	£129.95	**4Mb. RAM Version**	£329.95
2Mb. RAM Version	£199.95	**8Mb. RAM Version**	£549.95



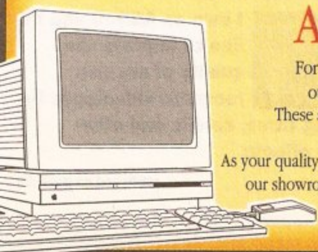
NAKSHA MICROSWITCHED MOUSE	£24.95
GOLDEN IMAGE OPTICAL MOUSE	£32.95
COMPETITION PRO JOYSTICK 5000 Black	£7.95
ZIPSTICK JOYSTICK	£12.95
COMPETITION PRO STAR JOYSTICK	£14.95

The ONLY joystick to obtain a 100% rating from a magazine review!

3.5" DISK HEAD CLEANER	£2.99

BLANK DISKS with labels

10 Genuine Commodore 3.5" branded	Only £9.95
10 Unbranded with library case 3.5" certified	Only £7.95
200 Unbranded 3.5" certified	Only £72.50



Apple™ in Alfreton...

For the professional user, Gordon Harwood provides the outstanding Apple™ Macintosh™ range of computers. These superb systems are available surprisingly competitive prices ....starting at under £1000

As your quality assured Apple™ Authorised Dealer, systems are available through our showrooms only. Please visit us for your personal introduction to this exceptional range of friendly yet powerful graphical computers.

Gordon Harwood Computers

Authorised Dealer

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ORDER BY PHONE: Phone our Order Hotline with your Access, Visa, Mastercard or Lombard Creditcharge Card quoting number & expiry date (most Dixons, Currys, NASCR and other 'store' cards are Lombard Creditcharge and are accepted by us).

ORDER BY POST: Make cheques, bankers building society drafts or postal orders payable to GORDON HARWOOD COMPUTERS. (Personal/business cheques take 7days to clear from day of receipt whereupon your order will be despatched). Please send Name, Address, and most importantly if possible, a Daytime Telephone Number along with your order requirements. Please check you are ordering from one of our latest advertisements before posting (phone if you require confirmation). Please remember that for example many September publications appear during August, therefore prices you see may have changed (either up or down).

FREE POSTAL DELIVERY: FREE within 14 working days, UK Mainland only, OR: **COURIER SERVICE.**.Add £5.95 per major item for next working day delivery, UK Mainland most regions.

EXPORT ORDERS: Most items are available at TAX FREE PRICES to non UK residents when visiting /export shipment. Please contact us for ordering information.

REMEMBER AFTER YOU'VE BOUGHT FROM HARWOODS, WE'LL STILL BE HERE...

TECHNICAL SUPPORT: You will be given our Exclusive Technical Support Phone Number to call should you require any help or advice on any aspect of the system you have purchased.
12 MONTH WARRANTY: Items proving faulty within 30 days of purchase are replaced with NEW UNITS unless otherwise stated. For the whole guarantee period, warranty service will be completely FREE OF CHARGE.
COLLECTION FACILITY: Any computer, monitor or printer requiring warranty service can be collected from your home FREE OF CHARGE during the guarantee period (UK Mainland only) and a FAST turnaround is GUARANTEED by our OWN ENGINEERS!
FULL TESTING PROCEDURE: All computers are tested prior to despatch, and all items are supplied with mains plug and leads as required - just connect up and use straight away.

REMEMBER WE'RE NOT JUST ANOTHER MAIL ORDER COMPANY...

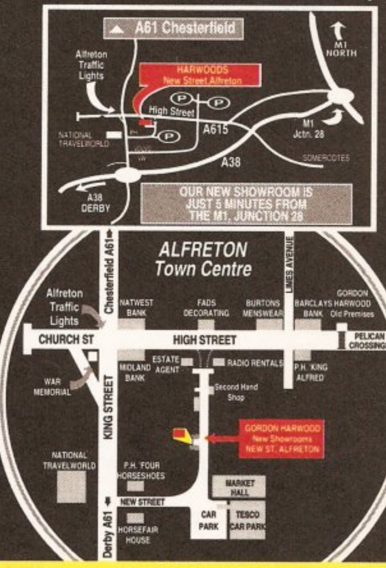
All listed prices are what YOU PAY, and there are NO HIDDEN EXTRAS. VAT and postage are included, and prices are correct at time of going to press (Pack details may vary from time to time). Offers are subject to availability and to being the latest advertised packs and prices. Our offers are NOT supplied on a trial basis. ***E&OE.***

FINANCE FACILITIES... **tailored to suit your needs. Written details on request.**
Gordon Harwood Computers offer facilities to purchase using our budget account scheme. APR 36.8% (Variable). Available to most adults of eighteen years or over, subject to status. Simply phone or write and we will send you written details along with an application form. Applications, required in advance, available to full time U.K. mainland residents and overseas British forces personnel. Showroom visitors, please ask for details of our in-store "Instant Account". Written quotations on request.
If you are already the holder of a Lombard Credit Charge Card you can use this to purchase from us (subject to your personal card limit)

VISIT OUR SPACIOUS SHOWROOM:
Please pay us a visit where our full range of advertised products, at the SAME COMPETITIVE PRICES, & MORE, is on sale. 'ALL UNDER ONE ROOF', in pleasant surroundings at our purpose built showroom *(See note below map)*. There's plenty of FREE parking close by.

If you're thinking about presents why not buy a Harwoods Gift Voucher (all values available).

OPENING TIMES:9.00 until 5.00 Monday to Saturday 9.00 until 1.00 Wednesday. Closed on Sundays



Whilst we always have specialised systems on permanent display, should you require a 'special' specific product demonstration we will be happy to oblige. Just phone us in advance to make the necessary arrangements.

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'task stack' will be in use before your program could do anything to modify it. I'm not saying you couldn't hack in and reset those pointers but I can't think of any reason why such a trick would be needed.

Having dealt with the task issues, now let's take a look at processes: Processes are AmigaDOS animals that perform task-like multi-tasking magic. Just as Exec tasks used a Task structure to act as a task control block so an AmigaDOS process uses a Process data structure which basically consists of three parts... an Exec Task, a communications channel, and some local data. A Process structure, in simplified form, can therefore be represented like this:

An Exec Task structure
An Exec message port
AmigaDOS process values

The layout for the Process structure can be found in the libraries/dosextens.h system header file, shown here:

```
struct Process {
   struct Task pr_Task;
/* Exec Task structure */
   struct MsgPort pr_MsgPort;
/* Exec message port */
   WORD  pr_Pad;
   BPTR  pr_SegList;
   LONG  pr_StackSize;
/* size of process stack */
   APTR  pr_GlobVec;
   LONG  pr_TaskNum;
/* CLI task number 0 if not a
CLI */
   BPTR  pr_StackBase;
/* pointer to top of process
stack */
   LONG  pr_Result2;
   BPTR  pr_CurrentDir;
/* Lock associated with
current dir */
   BPTR  pr_CIS;
/* Current CLI input stream
*/
   BPTR  pr_COS;
/* Current CLI output stream
*/
   APTR  pr_ConsoleTask;
/* handler for current window
*/
   APTR  pr_FileSystemTask;
/* file handler process */
   BPTR  pr_CLI;
/* pointer to
ConsoleLineInterpreter */
   APTR  pr_ReturnAddress;
   APTR  pr_PktWait;
   APTR  pr_WindowPtr;
};
```

The important thing to note here is that because a process includes a Task structure it seems to have *two* stacks: First of all there's the task control block stack. Secondly, there is the stack set up as part of the AmigaDOS process.

When you look at the stack areas involved you find that the process stack base pr_StackBase, has the same value as the task's tc_SPLower pointer – in other words the process stack area is stolen from the low end of the associated task structure's stack space.

I'm not going to pretend to know much about this area because it's not something that I've had any reason to experiment with. I do know however that one of the best places to start to look for technical details will be the AmigaDOS Manual (published by Bantam Books).

Here however are a few more bottom line details that you should know:

- Programs which run from the Workbench get their stack size from the .info file and run as new, totally separate, processes.

- Programs which are run from the CLI by typing 'run <program-name>' also cause the creation of totally separate processes (these however inherit a stack size for new stacks which is derived from the original CLI stack size value).

- Programs which are run from the CLI just by typing their name do NOT produce new processes but run as part of the existing CLI process. These programs therefore share the stack facilities of the CLI.

Identifying the stack values is easy: A running task or process can locate its Task/Process control block using the Exec FindTask() function. Once that address is available it's a matter of looking at the contents of the control block fields.

As far as the setting of new stack values is concerned the easy ways involve changing the value in the program's .info file or, as you mentioned, using the STACK command to alter the CLI default value. This latter command, incidentally, affects the size of the task stack area.

You might also find the AmigaDOS's Execute() function useful – this can be used to execute any AmigaDOS command from within an Amiga program. AmigaDOS also offers functions, such as CreateProc(), which enable you to create and specify the priorities and stack sizes of new processes. Details of all of these are also present in the AmigaDOS Manual.

Your second question is easier to answer: By 'normal memory allocation' I presume you mean the use of ordinary C functions such as malloc() and calloc(). With these functions the C compiler takes memory from a heap and, if this runs low, additional calls to acquire additional heap memory will automatically be made.

AllocMem() however is an Amiga system specific routine and this, as you mention, does allow you to specify a particular type of memory. It is able to work because Exec uses lists of free memory based on MemHeader and MemChunk structures. These lists are attribute marked (MEMF_CHIP etc.) using the mh_attributes field of the MemHeader structure. ***PAO***

JARGON BUSTING • JARGON BUSTING

CLI – Command Line Interface – a program that provides a window into which AmigaDOS commands can be typed. Also referred to as the Shell, although the Shell is a more sophisticated version,.offering a number of additional facilities over the CLI.

Emulator – A device, either hardware or software, that enables programs written for another machine to be used on the Amiga. The emulator makes the Amiga take on all (or most) of the characteristics of the foreign machine, and is transparent to the programs running under it.

EDUCATING AMIGA



I wish to purchase a computer, mainly for education. Would the Amiga be a good choice? Would you recommend the use of emulators to run educational software for IBM PC compatibles, BBC Acorn and Commodore 64 etc.? I have seen a good range of public domain software and I want the best of both worlds.

A Ohri
W. Midlands

From the beginning, different makes of computer have always been incompatible with one another. You obviously realise that it is not possible to take one 3.5in disk from an IBM PC (or any other computer, come to that), then place it into the Amiga drive and expect the same program to run on the new machine. This appears to be a major misconception among new computer owners and therefore explains the need for emulation software or hardware.

The Bridgeboard is a typical example of hardware PC emulation for the Amiga. Once the board is inserted, the Amiga temporarily changes into an IBM PC so that the latter's programs may run freely in the PC Colour Graphics Mode. The *BBC emulator* is a software program that is read from disk and again temporarily converts the Amiga into a BBC micro. Without the emulation software or hardware, these feats would not be possible.

There is a huge supply of public domain software for the Amiga at present and it is still growing. With this in mind, your reasons for wanting to emulate other machines may soon disappear.

Much educational software has been written for the BBC range of computers and the emulation of this machine on the Amiga is comparable, speed-wise, to the original machine. The bridgeboard and similar hardware emulation systems produce very satisfactory results if speed is not important. They perform considerably slower than later versions of PC machines, typically running at 4MHz compared to a standard PC which runs at twice that speed.

Finally, your reasons for buying an Amiga should reflect its superior graphics and multi-tasking abilities, which the other computers you have mentioned have no hope of achieving. One day all educational software will have these facilities but not until some of the software houses concerned have decided they can no longer continue to ignore the Amiga as an educational tool. ***MD***

COLOUR PRINTS



I recently wrote to The Silicon Picture Company, based in Leytonstone, London, enclosing a disk with a piece of artwork that I wanted printing.

A few weeks later I received a letter from them returning my cheque and disk. The letter informed me that they are no longer printing either T-shirts, A3, or A4 prints from the Amiga.

I am desperate to have some of my artwork printed in colour. Could you please tell me of any other companies which could do it.

Darren Bentley
Lincs

Studio 101 will print IFF pictures at a cost of £5 per A4 page. The company will also print T-shirts. Contact Studio 101 on ☎ 0827 280884. ***CR***

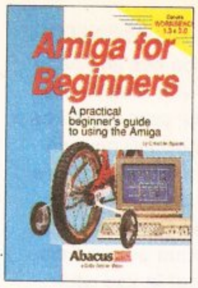
COMPATAPAL



I own an A2000 and I'd like to improve the quality of my own recorded videotapes by adding titles, scrolls and other video effects.

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AMIGA FOR BEGINNERS

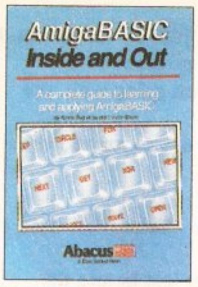


by C. Spanik

Learn the essentials of the Amiga quickly and easily, from opening the box to your first application. Revised for DOS 2.0. • Complete set-up instructions • Backing-up important diskettes • The Extras diskette • Setting preferences • Customising the Workbench • Introduction to AmigaBASIC • AmigaDOS commands • CLI tips and short-cuts • Creating your own icons • Includes Preferences 2.0 information. Using a hands-on approach to teach the first time user every detail, in clear and easy to understand terms, so you can get the most from your computer. Introduces you to *Intuition* (the Amiga's graphic user interface), the mouse, windows, AmigaBASIC and even the CLI (Command Line Interface). Clear step by step instructions.

Ref: 4256 Price:£15.45

AMIGA BASIC INSIDE AND OUT



by H. Rugheimer and C. Spanik

A combination of beginner's tutorial, advanced guide and authoritative reference - the complete guide to learning and applying AmigaBASIC: • Exciting graphics demonstrations • Graphic objects animation • Video titling program for creating unique titles on your VCR • Powerful database • Full-feaured Paint program • charting application for creating detailed pie charts and bar graphs • Speech utility for remarkable human voice synthesis demonstrations • Synthesiser program to create custom sound effects and music. Included are a complete reference section, an AmigaBASIC Quick Reference Guide, and detailed error messages descriptions with tips for avoiding the "guru" next time.

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WITH DISK

by Bleek, Maegler and Weltner

Dozens of tips on accessing libraries from BASIC, AmigaDOS, sound & more. Includes companion disk with ready to run programs. • Using the new AmigaDOS, Workbench and Preferences 1.3 & Release 2.0 • Tips on using the new utilities on Extra 1.3 • Customising Kickstart for Amiga 1000 users • Enhancing BASIC using ColorCycle & mouse sleeper • Disabling Fast RAM & disk drives • Using the Mount command • Writing an Amiga virus killer program • Changing type styles • Learn kernal commands • BASIC benchmarks • Disk drive operations & disk commands • Learn machine language calls. A great collection of Workbench, CLI & BASIC "quick hitters", hints & applications . Adv prog's will discover the Amiga's hidden powers.



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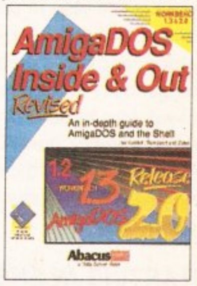
AMIGA DOS INSIDE AND OUT

WITH DISK

REVISED EDITION

by Kerkloh, Zoller and Tornsdorf.

Covers the insides of AmigaDOS from the internal design up to practical applications; includes many programming examples. Covers DOS 2.0 & includes Workbench 2.0 & 3.0 info. • AmigaDOS - tasks & handling • Amiga devices & how the CLI uses them • Customising your own startup sequence • AmigaDOS & multitasking • Writing your own CLI commands in C • Resetting priorities - the TaskPri command • In-depth guides to ED & EDIT • Ref for 1.2 & 1.3 CLI commands • Includes ARexx command summary and sample application programs. Including quick reference section for fast and easily accessible information.



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Price:£23.35 incl VAT

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WITH DISK

by G. Wright

A book for everyone who wants to use the Amiga for Video. You'll find information on video basics, videotape equipment, video/Amiga interfaces, artwork and more! Updated & expanded to include information about the latest advances in the desktop video market today. This includes extensive coverage of new products such as CDTV and the revolutionary 'TV Studio on a card' Video Toaster from Newtek. Also covers; • Genlocks • Digitising and scanning images • Frame grabbers • Video recorders & cameras • paint and drawing programs • animation • titling • music sources & examples • special effects • home and professional video techniques. Written by Editor in chief of Amiga World Magazine, Guy Wright.

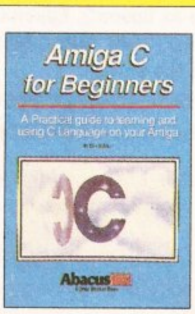


Ref: 9382
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AMIGA C FOR BEGINNERS

by C. Spanik

A practical introduction to learning and using C language on your Amiga. Basic and intermediate programming techniques without the jargon. • Beginner's overview of C • Writing your first C program • Special features of the C language • Important routines in the C libraries • Input and Output using C • The scope of the C language revealed (loops, conditions, functions, structures) • Tricks and tips for finding errors • Using two of the most popular C compilers. Explains the basic structure and peculiaritites of each C statement and function. And shows you how to use many of the features of the Amiga's operating system - windows, screen, text output, DOS functions and more.



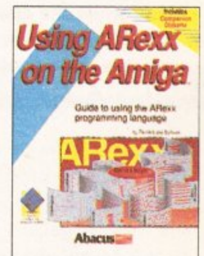
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WITH DISK

by Zamara and Sullivan

The most authoritative guide to using the popular ARexx programming language on your Amiga. Filled with tutorials, examples, programming code & an expanded appendix that you'll use over and over. **Including Disk** with ARexx examples typed in to save you time. • Short history of Rexx/ARexx • Thorough overview of all ARexx commands - with examples • Useful ARexx macros for controllong software & devices • How to access other Amiga applications with ARexx • Detailed ARexx programming examples for beginners & advanced users • Multi-tasking & inter-proramming communications. The text is sprinkled liberally with tutorials, examples and sample code. The power of ARexx is presented in a clear manner.

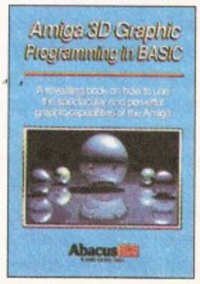


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by Jennrich, Schultz and Massman

Details the techniques and algorithms for writing three dimensional graphics programs, including ray tracing, shading and light sources. Topics include: • Basics of ray tracing • An object editor for entering 3D objects • A material editor for colouring, shadowing and mirroring of objects • Information about wire models • Automatic computation about wire models • Adjusting the projection point and main point of the graphic • Adusting the light source (direction and colour) • Saving graphics in IFF format • Mathematical basics for the non-mathematician.

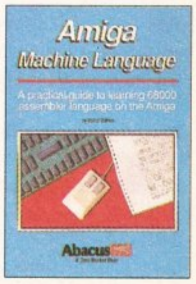


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AMIGA MACHINE LANGUAGE

by S. Dittrich

A practical, comprehensive guide for all Amiga users who want to tap all of the Amiga's true power using machine language. Combined tutorial and advanced guide. Many assembler programs presented, described and explained: • Simple number base conversions • Text input & output • Checking for special keys • Opening CON:,RAW,SER & PRT devices • New directory program that doesn't access the CLI • Menu programming explained • Speech utility for remarkable human voice synthesis • Complete intuition demonstration program including Proportional, Boolean & String gadgets. This is an essential tutorial and reference book for all Amiga machine language programmers.



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I bought *Scala* following your review and now want to buy a realtime digitiser and a genlock.

Finally I bought the famous *Superpic* from JCL. But then I had terrible doubts! I read that Italy has a different PAL system to the UK's. So I wondered if a UK-made digitiser can get pictures from Italian TV. These are my questions:

1 What's the PAL B/G system?
2 Is PAL B/G compatible with *Superpic* and its genlock?
3 Can *Superpic* digitise TV pictures in this system?

Fabio Lenzi
Florence
Italy

Good news, I hope! The PAL B and PAL G systems are only different from the UK PAL I standard as regards audio coding. The PAL B & G systems are also in use in Germany, Holland and other countries in Europe, and there are no compatibility problems there. So the answer has to be that if the *Superpic* and its genlock are PAL you will be OK, and you should certainly be able to digitise TV pictures with this system. ***GW***

STARTING IN SHELL



I have added a line in my startup-sequence to run a virus killer when I boot from my Workbench disk. The program works fine, but when the disk stops loading I'm left with a 'dead' AmigaDOS window in front of my Workbench screen. I say 'dead' because there is no 'SYS:>' prompt, so if I type 'endcli [Return]' nothing happens. I can make it smaller but I can't get rid of the damned thing.

Also, while the disk is loading I get '[CLI 2]' and a few seconds later another '[CLI 2]' on screen. I get the same problem if I try to get the clock going with 'run clock'.

The line I use to run the virus killer is:

```
Run Kill-Da-Virus
```

which appears just before the 'LoadWB' line in my startup-sequence.

Geoff Knowles
Wolverhampton

Your problem arises because the virus killer, being run from the CLI, has an input/output handle attached to the CLI window. Therefore the window will not close until the program it has launched has stopped.

To get around this, you can redirect the input and output handles of the program to NIL, meaning that it will not accept any input or output from the CLI window itself (although the program will function perfectly from Workbench). To do this, change the line in your startup-sequence to:

```
Run <NIL: >NIL: Kill-Da-Virus
```

If you want to run the *Clock* program from the startup-sequence, the same solution applies. ***CR***

STAR FORGETS LINES



I've sent you a printout from my Star LC-10 with narrow blank lines appearing across the print. Selecting Custom for the paper size (as suggested by Commodore) makes no difference.

I have separate Workbench disks for choosing printer drivers such as EpsonQ, EpsonXOld and EpsonX[CBM_MPS-1250]; they all print the same.

I use Platinum Scribble!, and the only problem is these narrow blank lines. Can you help please?

R W Weaver
Nottingham

Normally these narrow white lines are the 'banding' effect caused by slight inaccuracies in the line feed distances, and choosing the Custom paper size sometimes helps. But in your case I'm afraid it's bad news – the printout you sent me strongly suggests that one of the pins on the print head is either broken or stuck.

If the printer is still under guarantee take it back to where you bought it. If the guarantee has run out then I reckon you'll find it cheaper to buy a new printer than to get it fixed.

By the way, the EpsonQ driver is for 24 pin printers and won't work properly with the 9 pin Star LC-10. ***JW***

JARGON BUSTING • JARGON BUSTING

Digitiser – A device which takes the analogue information from a source eg a video camera converting it to digital screen information for a computer.

NIL – An AmigaDOS device that doesn't really exist. Most programs get input from a device and send their output to a device. Re-directing input so that it comes from NIL means 'don't expect any input'; re-directing output to NIL means 'discard all output'.

PAL – One of the main TV colour coding system, in use around the world and was developed by Britain. PAL refers to Phase Alteration Line. In fact, there are several hybrid PAL systems in use, all of which are slightly different.

Printer driver – A program that sits inbetween any program outputting text and the printer. It converts any codes describing text format into a form suitable for a specific printer.

RGB – Red Green Blue - a standard for video signals that provides better quality than composite or Radio Frequency signals.

SIMM - Single Inline Memory Module – collection of RAM chips in a package.

DISK DILEMMA



Can you please explain what floppy disk I should buy for the Amiga? I am confused by all the specifications, such as HD, EHD, DD and TPI etc.

JS Ansell
Harlow
Essex

Simple: the disks you require are 3.5in Double Sided, Double Density disks (DD) 80 TPI. Forget the rest, they don't apply to your machine yet. ***MD***

EXPANSION BOTTLE-NECK



I am considering purchasing a RAM expansion for my A500 to take it past the 1Mb limit. I have been told that if I purchase certain RAM expansions using SIMMs, then when I wish to expand beyond the initial 4Mb to 6Mb or 8Mb, I have to throw away the existing chips and replace them with another type. Is this true?

J Smyth
Ilfracombe
Devon

The short answer to your question is unfortunately true. Existing RAM in many cases will have to be removed in order to accommodate the increased capacity of the new chips. All is not as forlorn as it sounds, in many cases you can negotiate a trade-back price on your old chips. You won't get the full price back and you will have to negotiate. It is perfectly possible for the supplier to use these chips again in another 4Mb unit, therefore there is no reason why they cannot be credited to you on your next purchase. I bet that will make me popular! ***MD***

MULTI-FUNCTION MONITOR



My son has an Amiga 500 with a modulator and he uses the TV as a monitor. For my own purposes I am thinking of buying a PC with an SVGA colour monitor, with which I would like to be able to display colour output from the Amiga when not in use with the PC.

Is this practical? Or would I need a special, expensive monitor? And what about any special leads or other special hardware or software requirements?

R Mansell
Enfield

If you buy a monitor which can accept RGB input (and most can) then you should have no problems. All you need to do is get hold of the relevant lead to connect between the Amiga and your new monitor. Try Trilogic ☎ 0274 691115. The only problem you will then have is prising your son away from his Amiga and your monitor! ***GW***

WOT, NO ITALICS?



I have a Star LC-10 printer which I use with the Epson_JX-80 driver. Using the Textcraft Plus word processor, the printer will print out in plain, italic, bold, superscript and subscript. When I try to print out with a Canon BJ-10e bubble jet printer, using the Canon48 driver and the printer set to BJ-130e mode, the italics are printed out as plain characters. I have tried the Wordworth demo disk with the same results.

The manual for the Canon does not mention italics, but even if it did I do not understand the use of escape codes anyway. Is there any way of printing in italics with the Canon? It would be nice to have shadow as well. An idiot guide to the use of escape codes would be useful!

Also, could you recommend a hard disk backup program?

Kevin W Bennett
Sheffield

The BJ-130e emulation does not support italics, which is why it prints them out as plain. Alas, the other emulation the BJ-10e provides, IBM Proprinter X24E, doesn't support italics either. This is why the manual makes no mention of italics.

However, if you use the UltraPrint feature of *Wordworth* you can output to the printer exactly what you see on the screen – that is, any Amiga font in any of the styles *Wordworth* supports. The quality is not as high as the internal printer fonts, but I think you'll find it acceptable.

Incidentally, Wolf Faust has written a proper Canon BJ-10e printer driver now (the Canon48 driver was written for the BJ-130). You can get it from *Just Amiga Monthly* ☎ 0895 274449 on Jamdisk #5.

As for an idiot guide to escape codes... well, the problem is that each word processor that allows you to send control codes does so in a different way.

I recommend you get hold of a copy of the Abacus book, *Amiga Printers Inside & Out*. It's a massive book, and a bit expensive at £32.95, but that just shows you how much there is to printers and why an article in *Amiga Shopper* couldn't do the subject justice.

And I've got just one word to say on hard disk backup utilities – *Ami-Back* (see this month's review). It's the butterfly's elbows. ***JW***

FINDING MY WAY



I was recently introduced to a software package called *Auto-Route*, which ran on an IBM PC. The principle of the package is to find the quickest and best route for a given destination. I would like to know if such a package is available for the Amiga, and if this is the case how much I would be expected to pay and where I would purchase it from.

C Taraborelli
Wrexham
Clwyd

A similar program for the Amiga is *GBRoute Plus*. It costs £79.95 and is available from Complex Computers on ☎ 0706 224531. It requires 1Mb of memory to run. ***CR***

FILE CONVERSION



I wrote to you recently about converting PC TIFF files to the Amiga IFF files. The program you recommended was Art Department Professional; so I purchased "Art Department" plus the TIFF loader. Since the Amiga will not load a PC disk and vice-versa, how can I create a TIFF file that will be acceptable to the Amiga and the TIFF loader?

R Jones
Eastleigh
Hants

We have answered this question in a round-about fashion before. Several programs exist in the public domain which are specifically for the purpose of transferring PC files on to the Amiga.

Try *Messydos* (FF382), see *Amiga Shopper* issue 6 page 58. ***MD***

P'D OFF WITH PEN PAL



When using *Pen Pal* with my Star LC24-200 colour printer I get a 'P' at the beginning of every line. There are times when this does not happen, but I can never remember the sequence I use to solve the problem. Please help!

Jim Robson
Gosforth

This is a little tricky to sort out because you haven't told me which printer driver you are using, nor whether you have selected Amiga Fonts or Printer Fonts from the *Pen Pal* Print requester for your printout. I'll assume you are using the EpsonQ driver and have selected Printer Fonts.

Spurious characters at the beginning of documents or at the beginning of each line of a document usually mean just one thing – the printer has been sent a control code it doesn't understand. Control codes generally consist of an escape character (usually written as 'ESC') followed by a printer function control command, plus sometimes another one or two bytes of data, typically a 0 or a 1 to turn a function on or off. The escape character tells the printer that the next character or characters it receives are to be interpreted as control commands as opposed to ASCII characters.

So the 'P' is a rogue printer control code, which is puzzling because the Epson 'ESC P' command is nothing more than the command which sets the printer to print at 10 characters per inch, or 'pica'. It's further puzzling because *Pen Pal* only sends this code once, right at the start of the printout, so if the printer doesn't understand it the most you should get is one 'P' at the top of the page.

There are 2 things to check. First make sure you are using a compatible printer driver – either the EpsonQ or Nec_Pinwriter one should work okay – and then check that your LC24-200 is in Epson emulation mode, not IBM.

I don't have an LC24-200 to test this theory on, but try setting the Printer Paper Feed in the System/Preferences/Program requester to Continuous (that's *Pen Pal*'s preferences, not Workbench's). I've solved a similar problem with a Canon BJ-10e by doing this. ***JW***

VIDEO VENTURES



Right now I use an Amiga 500 with 2MB and 9" TV monitor to produce titles with such programs as *Broadcast Titler 2*, *TV Text Professional* and *Digipaint*. The output goes to a Panasonic VHS via a modulator. In connection with this I have several questions for you:

1 When I playback the tape after recording I notice a loss in picture quality. Why?

2 Can you give me any advice on what software to use to produce 3D graphics and animations, such as a heart shape appearing at each side of the screen and moving to join together in the centre?

3 Is there a program I can use to create my own borders?

4 I would like a program with numerous creative fonts to use in conjunction with *Scala* and *TV Text Professional*.

5 Can you tell me if *Scala* is compatible with *TV Text Pro*, or vice versa?

6 Is there a program I can use to create an 'album effect', allowing me to add photos and graphics or animated graphics?

Y Mehmet
Southampton

The video problem is something we all have to cope with. Technically speaking, the bandwidth of the VHS system is too low to accurately reproduce the image you see from either the Amiga RGB or modulator video output at the monitor, resulting in quality reduction. There are various other contributing factors as well – such as using a modulator, video tape quality and the type of output you use to replay the picture through the monitor (composite video is better than RF). To really improve playback you should use a good quality genlock or RGB converter to record the Amiga with, on to the best quality VHS tape you can afford. This will help significantly, though the only way to really make a large improvement is to record on to a higher quality video system, such as Super-VHS or better formats.

On the software front, I recommend that you buy *Deluxe Paint 3 or 4*, as you'll be able to make your own borders and do animation with it as well, even doing the 3D hearts if you can draw a little. If you really want to do 3D animations try *Real 3D*, as it should work OK with the memory you already have.

If you want fonts for *Scala*, remember that it actually includes a good selection and since it can use any other Amiga fonts you could buy others, or use ones you already have. From my (limited) knowledge of *TV Text Pro* I would think that the only compatibility would be in the use of IFF picture files, but of course I'm willing to stand corrected.

The album effect you require could be produced by various programs – in fact almost any which will allow you to display pictures in a slide show style. You could try *Deluxe Paint*, *Deluxe Video*, *Scala*, *Amiga Vision*, *Showmaker* or various others. There are probably even PD programs that do this. Each program has different restrictions, refinements and features, so I would recommend seeing what *Deluxe Paint 4* is capable of, then looking at *Scala* next. ***GW***

PROGRAM INTERCHANGE



I was wondering if it is possible to convert standard PC programs to the Amiga without using an emulator. Is there a public domain program which can do this?

O Harker
Scotland

No, it is not possible. Programs written for one computer are completely different to those written for another. Even if the differing computers have the same central processing unit (which the PC and Amiga do not), they usually handle their disks, graphics, sound and so on in different ways.

The only answer is to either buy an emulator or an Amiga version of the program that interests you. ***CR***

ASSEMBLY ANGST



I am a lonely assembler programmer (or would like to be – an assembler programmer, not lonely). I've got all the stuff: *DevPac 2*, all the *Amiga ROM Kernel Reference Manuals*, an *Amiga Machine Language* book (*Abacus*), *Programming the 68000* book (*Sybex*) and *AmigaDOS 2* (books 1 & 2).

Guess what? I still can't get to grips with it. I don't think I'm thick, I used to program 8-bit machines all the time (for fun) – hell, I even got a graphics dump program published nationally. The 16-bit machine has well and truly got me stumped. I can open a custom screen and window, set up a palette and so on, but that seems to be it.

It's not a problem with the 68000 instruction set, it's the library system I have trouble with. I managed OK with the Kernal ROM on the CBM Plus 4. Everything seems so disjointed and complex on the Amiga. I know what I want, but I can't get it.

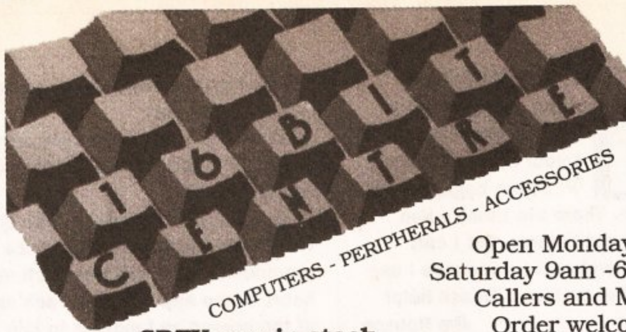
I have just spent 4 days (forty hours) trying to initialise a TmpRast structure. You won't believe how many times I've produced a Guru. I'm only doing this because I've drawn a box and want to flood fill it. I know I could do a RectFill(), but I want to Flood (just the kind of guy I am).

Please can you put me out of my misery. Euthanasia is one

continued on page 67

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Access

VISA

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option, but I'd prefer some friendly advice. Is there a book, disk, training course, or club dealing with programming graphics in assembler? Incidentally I have *PowerWindows*, but want to be able to do it on my own before taking the easy way out (otherwise I won't learn anything).

By the way, is it normal to spend 4 weeks of hard slog before you understand the *RKM*s? And why are the examples all in C?

Mick Healey
Sussex

With three or four thousand pages of documentation to cope with, and a stated objective of programming in assembler, it's not surprising you've run into a few minor snags.

You say that the Amiga's operating system seems complex. The reason is simple – it is complex. Once the O/S arrangements fall into place, however, you'll realize that, far from being disjointed, the Amiga's O/S is in fact flexible, well organized and very powerful. Like the rest of us you'll never learn everything about it but you will come to terms with the documentation and from that point on, you'll be able to do anything you want to systems-wise.

The key to overcoming the learning-curve problems on the Amiga is to adopt the same approach as that used by UNIX programmers and the like – acquire an understanding of the documentation (and get used to its layout) so that you are able to find particular items of information with the minimum of fuss.

Perhaps, unfortunately for you, especially since assembler seems to be your main interest, this means learning C. If you haven't got a reasonable grasp of C then ninety percent of the *RKM* wisdom is likely to pass you by. Why was C chosen? Firstly it's a great systems language (for more information see Cliff Ramshaw's language of the month on page 101). Secondly, C's use of structures, pointers and flow control constructs makes it possible to explain the Amiga system in a reasonably 'high-level' fashion. If the *RKM*s had been written entirely in assembler they probably would have been 2 or 3 times the size and most programmers just wouldn't have had the time to do them justice.

As far as spending 4 days (forty hours) trying to initialise a TmpRas structure goes, BAD NEWS... it shouldn't have taken you that long to work out what you were doing wrong. Don't dwell on it though, we've all been down that particular road from time to time. If this is happening a lot it might indicate that you are drinking too much (or alternatively that you are not drinking enough).

LISTING A • LISTING A • LISTING A • LISTING A • LISITNG A

```
* This, hopefully, is a
* straightforward example of
* Graphics/Intuition library call
* use (including flood-fil
* operations) from 68K assembler.
* No shortcuts or clever
* stuff, I've just gone
* sequentially through
* each of the stages involved
* in opening the libraries,
* opening a screen, drawing a
* box, setting up a
* TmpRas/Buffer arrangement,
* doing a flood- fill, and then
* closing down
* in a reasonably orderly manner.
* Sorry about the amount of typing
* involved but this is the shortest
* 'real', ie runable, example
* I could come up with...

    NOLIST

* some includes...

    incdir "df1:include/"
    include exec/exec_lib.i
    include libraries/dos.i
    include libraries/dos_lib.i
    include intuition/intuition.i
    include intuition/intuition_lib.i
    include graphics/graphics_lib.i

* some equates...

SCREENWIDTH     EQU     320
SCREENHEIGHT    EQU     256
SCREENSIZE      EQU     40*256
SCREENDEPTH     EQU     3
DETAILPEN       EQU     2
BLOCKPEN        EQU     1

* Before we can do anything
* we must open the libraries
* which are going to be used.
* This example uses three
* separate OpenLibrary()
* calls...

OPEN_DOS:
    move.l      #dos_name,a1
    move.l      #0,d0
    CALLEXEC    OpenLibrary
    move.l      d0,_DOSBase
    beq         EXIT

OPEN_GRAPHICS:
    move.l      #graphics_name,a1
    move.l      #0,d0
    CALLEXEC    OpenLibrary
    move.l      d0,_GfxBase
    beq         EXIT

OPEN_INTUITION:
    move.l      #intuition_name,a1
    move.l      #0,d0
    CALLEXEC    OpenLibrary
    move.l      d0,_IntuitionBase
    beq         EXIT

* Next step is to initialise
* some non-zero items of an
* example NewScreen structure
* in readiness for making the
* assembler equivalent of an
* OpenScreen() call...

INITIALIZE_NEWSCREEN:
    move.l      #newscreen,a0
    move.w      #SCREENWIDTH,ns_Width(a0)
    move.w      #SCREENHEIGHT,ns_Height(a0)
    move.w      #SCREENDEPTH,ns_Depth(a0)
    move.b      #DETAILPEN,ns_DetailPen(a0)
    move.b      #BLOCKPEN,ns_BlockPen(a0)
    move.w      #CUSTOMSCREEN,ns_Type(a0)

* All done, so perform an OpenScreen() call.
* Store the resulting
* pointer for closing screen at later stage
* and then extract the
* Screen's RastPort/ViewPort pointers and
* store them as well...

OPEN_SCREEN:
    CALLINT     OpenScreen
    move.l      d0,g_screen_p
    beq         EXIT
    move.l      d0,a1
    lea.l       sc_RastPort(a1),a2
    move.l      a2,g_rastport_p
    lea.l       sc_ViewPort(a1),a2
    move.l      a2,g_viewport_p

* Now that the screen is open and the Screen,
* RastPort and ViewPort
* pointers are available (and safely stored)
* I'll install a palette
* and set the screen to some (arbitrary
* chosen) colour...

SET_PALETTE:
    move.l      g_viewport_p,a0
    move.l      #colourmap,a1
    move.w      #8,d0
    CALLGRAF    LoadRGB4

SET_SCREEN_COLOUR:
    move.l      g_rastport_p,a1
    move.b      #4,d0
    CALLGRAF    SetRast

* Now for the box drawing stuff. Normally you
* would write a generalized
* subroutine to carry out the following types
* of graphics operations but
* for simplicity I have coded everything as a
* series of sequentially
* executed operations.

* Following code draws a box with co-
* ordinates (50,50), (150,50),
* (150,100) and (50,100) using the graphics
* library Move() and Draw()
* functions...

DRAW_BOX:
    move.l      g_rastport_p,a1
    move.w      #50,d0
    move.w      #50,d1
    CALLGRAF    Move
    move.l      g_rastport_p,a1
    move.w      #150,d0
```

continued on page 68

LISTING A • LISTING A • LISTING A • LISTING A • LISTING A

continued from page 67

```
    move.w       #50,d1
    CALLGRAF     Draw
    move.l       g_rastport_p,a1
    move.w       #150,d0
    move.w       #100,d1
    CALLGRAF     Draw
    move.l       g_rastport_p,a1
    move.w       #50,d0
    move.w       #100,d1
    CALLGRAF     Draw
    move.l       g_rastport_p,a1
    move.w       #50,d0
    move.w       #50,d1
    CALLGRAF     Draw

* Wait for 100 ticks (2 seconds) so that the
* box can be seen...

PAUSE_BEFORE_FLOODING:
    move.l       #100,d1
    CALLDOS      Delay

* Now comes the part that was causing Mick
* Healey's problems, namely
* the setting up of the TmpRas/Buffer
* arrangement needed to provide
* temporary storage during flood-fill
* operations. Three steps are
* necessary - the temporary storage area has
* to be allocated from
* available chip memory, then the TmpRas
* structure has to be
* initialised, finally the TmpRas structure
* has to be linked into
* the screen's rastport.

* Here's some example code for acquiring a
* bitplane-sized buffer in
* chip memory. The AllocRaster() returned
* pointer is stored to enable
* me to deallocate the buffer before the
* program terminates...

ALLOCATE_BUFFER:
    move.l       g_rastport_p,a1
    move.w       #SCREENWIDTH,d0
    move.w       #SCREENHEIGHT,d1
    CALLGRAF     AllocRaster
    move.l       d0,bitplane_buffer_p
    beq          EXIT

* If this is OK we can initialise the TmpRas
* structure...

    move.l       #tempras,a0
    move.l       bitplane_buffer_p,a1
    move.l       #SCREENSIZE,d0
    CALLGRAF     InitTmpRas

* And link the TmpRas structure into the
* RastPort like this...

    move.l       g_rastport_p,a0
    move.l       #tempras,rp_TmpRas(a0)

* Now is it possible to flood-fill
* without  Guruing...

FLOOD_FILL:
    move.l       g_rastport_p,a1
    move.w       #55,d0
    move.w       #55,d1
    move.w       #0,d2
    CALLGRAF     Flood

* Wait for 100 ticks (2 seconds) before
* closing down and quitting...

PAUSE_BEFORE_CLOSING:
    move.l       #100,d1
    CALLDOS      Delay

* This is the exit code that we
* either fall into naturally
* or jump to after an error
* (via the appropriate label)

EXIT:
    tst.l        bitplane_buffer_p
    beq  EXIT1
    move.l       bitplane_buffer_p,a0
    move.w       #SCREENWIDTH,d0
    move.w       #SCREENHEIGHT,d1
    CALLGRAF     FreeRaster

EXIT1:
    tst.l        g_screen_p
    beq          EXIT2
    move.l       g_screen_p,a0
    CALLINT      CloseScreen

EXIT2:
    tst.l        _IntuitionBase
    beq          EXIT3
    move.l       _IntuitionBase,a1
    CALLEXEC     CloseLibrary

EXIT3:
    tst.l        _GfxBase
    beq          EXIT4
    move.l       _GfxBase,a1
    CALLEXEC     CloseLibrary

EXIT4:
    tst.l        _DOSBase
    beq          EXIT5
    move.l       _DOSBase,a1
    CALLEXEC     CloseLibrary

EXIT5:
    moveq.l      #0,d0
    rts

* A few variables and constants used by the
* example program...
_DOSBase         ds.l    1
_IntuitionBase   ds.l    1
_GfxBase         ds.l    1
g_screen_p       ds.l    1
g_rastport_p     ds.l    1
g_viewport_p     ds.l    1
bitplane_buffer_p        ds.l    1
newscreen        ds.b    ns_SIZEOF
tempras          ds.b    tr_SIZEOF
colourmap        dc.w    $0000,$000F,$00F0,↵
$0F00,$0F0F,$00FF,$0FF0,$0FFF
dos_name         DOSNAME
graphics_name    GRAFNAME
intuition_name   INTNAME
```

Do you look at (and understand) the Guru numbers? Do you build your programs by incremental testing, assembling and testing new versions when new routines are added so that you are never far away from a working, ie runable, program?

Initialising a TmpRas structure and flood filling should be easy enough but without seeing your assembler code it's probably best if I don't speculate on potential Guru causes. There is a graphics library routine called InitTmpRas() which handles the initialisation but before using it you have to allocate some Chip memory for a buffer. The general idea is that you open the screen, allocate the buffer, initialise the TmpRas structure and link it into the screen's RastPort. After that the flood fill operations should work.

All of this is explained (using C style explanations) in the *RKM*s, but since no real assembler help is given, and since we've had so many queries about these problems, I've decided to knock up a complete (runable) assembler example (see lisitng A, starting on page 67) which should illustrate the points you've raised. What's more, I've coded so you can see each significant operation as an isolated unit.

Opening and using library functions is not difficult. Once you've seen how similar the overall formats of all library operations are, you'll change your mind about the system being 'disjointed'. Basically you just shove any required parameters into the right registers (as described in the Includes & Autodocs Manual), and then use the appropriate system macro to make the call (collecting any result which may be returned).

Here are the operations which the program will carry out:

1 Open the DOS library
2 Open the graphics library
3 Open the Intuition library
4 Initialise a NewScreen structure
5 Open a screen
6 Set up palette
7 Set some arbitrary screen colour
8 Draw a box
9 Pause before flooding the box
10 Allocate a buffer for the flood operations
11 Initialise the TmpRas structure
12 Link the TmpRas into the RastPort
13 Floodfill the box
14 Pause before closing
15 Deallocate the flood buffer
16 Close the screen
17 Close the Intuition library
18 Close the Graphics library
19 Close the DOS library
20 Exit from the program

The code is contained in the box entitled Listing A on this and the previous page. ***PAO***

Beginners start here

Having taken your brand new Amiga out of its box and plugged it in, you may well be more than a little bewildered at what confronts you. Although the machine is on the whole easy to use, there are a host of concepts to learn before you can make full use of it. Here we aim to outline some of these fundamentals to save you time and effort in coming to grips with your new machine; but always remember that the best way to learn about the Amiga is to experiment.

WHAT IS A COMPUTER?

A computer is a machine which will follow a set of instructions. It cannot think, but merely does what it is told. The instructions which it follows can come from a number of sources: instructions held internally, from the makers of the computer; instructions from a third-party program which is loaded in from a floppy disk; instructions from you, the user, typed in at the keyboard. The results, known collectively as 'output', are sent either to the screen, to the printer (if you have one) or to the disk in the floppy disk drive.

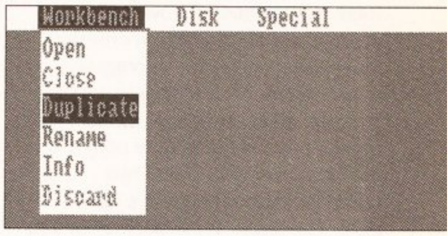
HOW DOES IT WORK?

Well, without getting carried away... at the heart of the machine is something called the Central Processing Unit (CPU). This is the bit which interprets the instructions sent to it (in a very simple language called 'machine code') and does what they tell it to. The instructions are held in the computer's memory.

MEMORY

The classic analogy is that of comparing memory to matchboxes. Imagine an incredibly long row of matchboxes, each numbered and each with something inside it. The contents of a memory location can be found or changed by referring to the number of the relevant matchbox, opening it and taking a look (or putting something else in). In practice, all that these matchboxes contain is numbers, but these numbers can be understood by the computer as words, pictures or sound (or indeed they can be kept as numbers). There are two main types of memory: RAM and ROM. RAM (standing for Random Access Memory) can be altered at any time by the computer. Once the power is switched off, the contents of RAM are 'forgotten'. ROM (Read Only Memory), on the other hand, is never changed, even when the power is

On the next three pages, deputy editor Cliff Ramshaw answers a number of questions frequently asked by those new to the Amiga



The Workbench menu; and someone's about to try duplicating a disk.

switched off. It contains the basics of the operating system – the set of instructions which determine the overall behaviour of the machine at all times.

Memory is measured in units known as bytes. In every byte a number between 0 and 255 can be held. To hold bigger numbers, or more complex items of information, bytes are joined together into larger units. More conveniently, memory is spoken of in terms of kilobytes (K) or Megabytes (Mb). A kilobyte is 1,024 bytes; a megabyte is 1,024 kilobytes or 1,048,576 bytes. The reason that they are not nice round 1,000s and 1,000,000 lies in the organisation of bytes according to the rules of binary arithmetic, but that's not important right now...

FAT AGNUS

Possibly the most common question we get asked here at *Amiga Shopper* is about the Fat Agnus chip. Agnus is one of several custom chips inside the Amiga dedicated to producing graphics and sound. Whereas the Amiga's central processor can access all of the memory in the machine, the Agnus chip is limited to a much smaller portion, known as Chip RAM (since it can be accessed by the custom chips).

It is here that graphics information must be stored. Anything you see on the screen has an equivalent form inside the Amiga's memory, in Chip RAM, and it is Agnus (amongst others) that does the job of converting this information into the form of a picture.

The rest of the Amiga's RAM (as opposed to ROM) is termed Fast RAM. Whenever Agnus accesses the Chip RAM, it prevents the Amiga's central processor from doing so at the same time. Because much of what a processor does involves accessing memory, this has a tendency to slow the processor down. Memory which is not Chip RAM, on the other hand, can be accessed by the processor whenever it likes, without a speed penalty. And that's why it's called Fast RAM.

Now, the more Chip RAM, the better, since it means that more complex graphics can be on screen at once, bigger and smoother animations can be performed and more impressive sound samples used. The early Agnus chips could access 512K of Chip RAM, or half of a megabyte (the amount of memory that comes with an Amiga 500). This chip is numbered 8361, and was present on A1000s and early A2000 machines.

After that came the Fat Agnus, with a shape more like that of a square and a couple of extra features. This is the one in the majority of Amigas. Its part number is 8371 (or 8370 for the American version). Like its predecessor, it can access 0.5Mb of Chip RAM.

In the last year or so, Amigas have been released with an even newer Agnus chip. This is known as the Fatter Agnus, and it can recognise 1Mb of Chip RAM. It has part number 8372a. An even newer version exists, accessing 2Mb of Chip RAM, but this is only available for the new Amiga 3000.

Hope that's cleared things up.

WHAT ABOUT DISKS?

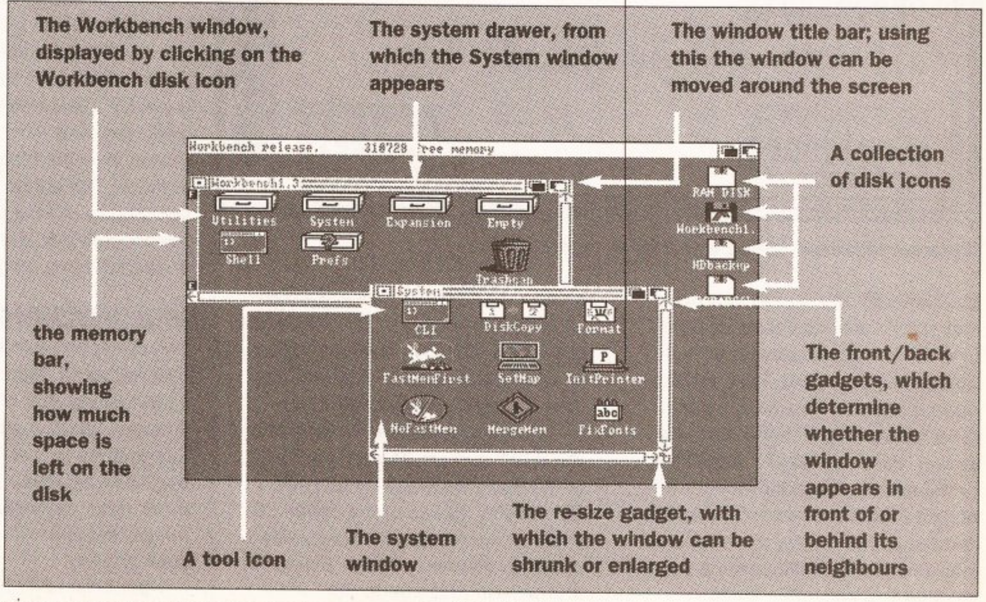
Disks can be thought of as removable memory. The difference is that the processor cannot directly access anything held on a disk. Before it can get its hands on it, the contents of the disk must be 'loaded' into the computer's RAM.

Information is stored on a disk in the form of files. A file is simply a grouping of related infomation with a name. The information is referenced by using the file name.

INFORMATION

Two types of information may be held in memory and on disks. The first type is the information which makes up a program. A program is a collection of instructions for the computer to follow. As well as the operating system, which is nearly always present, the Amiga may have several programs 'running' inside its

continued on page 70



This illustration shows the basic components of the Amiga screen.

continued from page 69

memory at any one time. These can instruct it do such things as draw pictures or operate a spreadsheet.

The second type of information is known as 'data'. This is also held in RAM, but instead of providing instructions for the CPU, it provides information on which the programs may operate. For instance, a program which adds two numbers together needs some data before it can be of any use. These two numbers are the program's input data. The result of the addition is the output data. Another example is given by the *Deluxe Paint* package. This is a program. Any key presses or mouse movements you make are input data for the program; the picture that is gradually drawn is the output data. Of course, this picture may be saved on to a disk at any time, and loaded back at a future date. In such a case, the picture has now become input data for the program. As you can see, the distinction between input and output data can become somewhat blurred.

WIMP

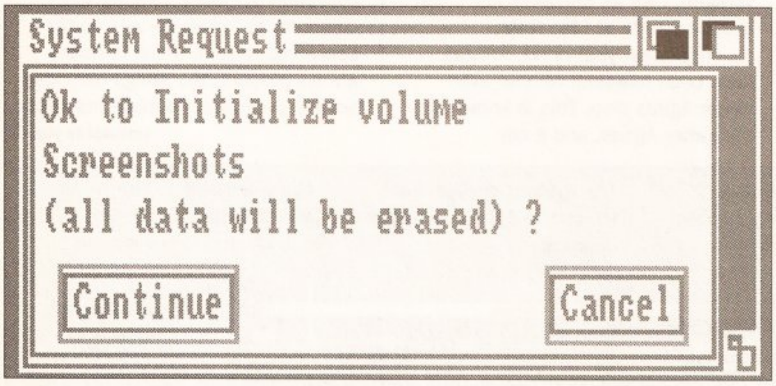
In days of yore, people used to control computers exclusively by keyboards. Because of the relatively new WIMP (windows, icons, menus, pointer) system, many tasks can be greatly speeded up and performed in a more intuitive manner (hence the name of the part of the Amiga's operating system that deals with this: Intuition).

All disks, programs and related collections of data are displayed on the screen as small pictures, known as icons. To prevent things getting too cluttered, the screen is divided into small sections called windows, in which the icons relevant to that window are displayed. Each window may be open or closed (in which case it reverts to either a disk or a drawer icon), moved around relative to the screen, moved in front of or behind other windows on the screen, and resized to display more or less information. All of this may be done by means of gadgets – small graphical symbols around each window's borders that represent these functions. Windows may be nested hierarchically inside each other by means of drawer icons. Whenever a drawer icon is opened, a new window is drawn with its own icons within it.

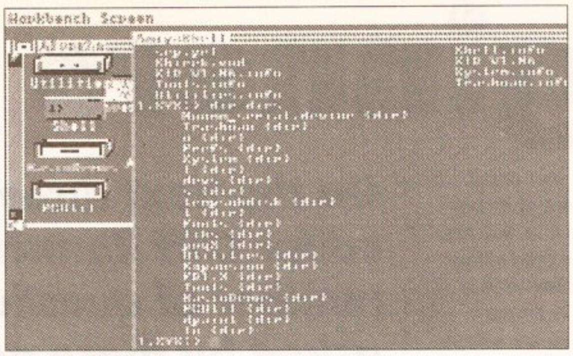
Icons are accessed with the screen pointer, which is moved across the screen by moving the mouse across the desk. Once the pointer is above an icon, that icon can be accessed by pressing the left mouse button twice in quick succession (a process termed 'double-clicking'). The effects of this will vary depending on the icon in question: in the case of a disk or drawer icon, a window will be opened; in the case of a program (or 'tool'), the program will be loaded from disk into RAM and run (in other words, the Amiga will start to follow the instructions contained in the program); clicking on a data icon (or 'project') will result in the data's corresponding program or tool being loaded from disk along with the data on which it will begin to operate. The pointer is also used to control a window's gadgets, but in this case the left mouse button need only be pressed once.

A special type of icon that you should be aware of is the 'trashcan' icon. Other icons may be moved inside here by placing the pointer above them, pressing and keeping pressed the left-hand mouse button, and moving the pointer and icon until they are above the trashcan. Releasing the mouse button results in the icon being dumped in the trashcan. The contents of the trashcan can be revealed by clicking on it in the same way as you would click on a drawer icon. The difference is that the trashcan may be emptied, in which case all of its contents are gone for good. Handle with care.

Menus are another innovation of the WIMP system. Menus are a list of options displayed in a text box, selected by means of the pointer. In this way, more complex operations can be performed with the mouse and without recourse to the keyboard. When first switched on and with Workbench loaded in RAM (Workbench is the part of the Amiga's operating system which is not held permanently in ROM), a basic set of menus are available which enable you to do such useful things as copy disks and so forth. Most programs have their own custom set of menus, relating to the particular things that the program is used for.



A system requester, giving a chance to reconsider.



The Shell provides a command-line interface to the Amiga, similar to that used on IBM PC-compatibles.

Menus are displayed at the top of the screen. Pressing the right-hand mouse button (and keeping it pressed) reveals the title of each available menu in the white bar at the top. Moving the pointer up to one of these titles (with the mouse button still pressed) will cause the Amiga to display the list of options in a box beneath the title. As the pointer is moved down this box, each of the options will be highlighted in turn. Releasing the right-hand mouse button with one of the options highlighted will result in that option being executed.

Although not mentioned in the WIMP acronym, another aspect of the system is the 'requester'. A requester is a box that appears on the screen during an operation – usually a dangerous one such as erasing a disk – displaying a small amount of text and asking the user for what is normally a yes or no reply. In the case of erasing a disk, the text will say 'Ok to initialise volume [name of disk] (all data will be erased)?'. Two gadgets are displayed, one with 'Continue' written in it, the other displaying 'Cancel'. The option you want is selected by moving the pointer over the relevant box and pressing once on the left-hand mouse button.

MULTI-TASKING

One of the Amiga's special features that you've no doubt heard about is multi-tasking. The Amiga is unique amongst home computers in having this feature; in fact it's not until you begin to look at computers very much more expensive than the Amiga that you will normally find such a thing.

But what is it? Basically, multi-tasking is the ability to run more than one program at the same time. This may not seem like a big deal: after all, there is only one of you controlling the thing, and you can't control more than one program at a time. There are advantages to multi-tasking, though.

At its simplest, multi-tasking allows several programs to be running in memory, waiting for you, the user, to use them. You can be working on one of these programs, a word processor for instance, and suddenly realise that you need to do some mathematics so that you can put the answers to some calculations in your document. Ordinarily, you would have to quit out of the word processor, load up the calculator program (OK, I'm assuming you don't have a pocket calculator, but you get the idea), do your sums and write down the answers, then quit out of the calculator and load your word processor again, load in your document, find where you were in it and type in the answers from your piece of paper. Quite a hassle. With the Amiga, the calculator could have been waiting in the background all along, eager to help you out. A couple of mouse clicks brings it into action, and you can get your results there and then. Again, a couple of mouse clicks brings back the word processor, exactly where you left it. With more sophisticated software, you will often find that the data can be directly transferred from one program to another, saving you even more work.

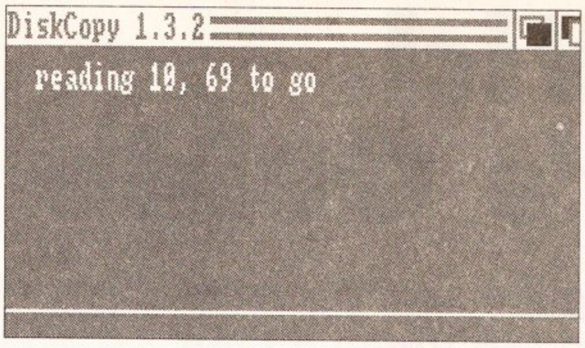
Another advantage of multi-tasking is in running programs which require little or no user input. For instance, you could set a landscape generator going, and meanwhile get on with adding up your family accounts or whatever.

Theoretically, there is no limit to the number of programs you can have running at once. In practice, the number is limited by your available memory: each program requires its share. Also, the more programs that are running, the slower the machine becomes overall. This is because of the way multi-tasking works.

The central processor of a machine like the Amiga can only do one thing at a time. A part of the Amiga's operating system known as Exec (for Executive) decides what the processor will do next. It looks at all of the programs running, and gives each of them in turn a little slice of the processor's time. This swapping from one program to another

happens so fast that all of the programs seems to be running at once. It's all very clever, especially when you consider that Exec itself is just one amongst the many programs running in this way.

To be fair, there are a couple of disadvantages to multi-tasking. The first is that it is often unnecessary. It *can* be useful, but ore often than not you will want to use your computer for one job at a time. But because multi-tasking is such a complex business, it means that the Amiga's operating system is much bigger and complex than it might otherwise be. And this means that it is more likely to fall over occasionally, which leads us on to the second disadvantage: crashing. On mini and mainframe computers, which as well as being multi-tasking also support several users, each program is well protected from all of the others running at the same time. That way, if one program crashes, the rest can go on unharmed. With the Amiga, though, this is not the case. It is possible for a rogue program to effect any others that may be present. In general, if one program crashes on the Amiga, they all crash and the machine has to be re-booted. If you've been entering your accounts for the last hour and a half when your Mandelbrot program decides to crash, all of your typing will be lost. This is one good argument for saving your work to disk at regular intervals.



The display you can expect when copying (duplicating) a disk. A disk is divided up into 80 cylinders, most of which

COPYING DISKS

The first thing that you should do after unpacking your new Amiga is to make copies of your Workbench and Extras disks. This advice also applies to any other disks that you get – although most games and some serious software won't allow you to do this in the interests of preventing piracy.

Copying disks is a good idea because disks have a tendency to get corrupted and lose whatever is stored on them from time to time. Always use the backup copies that you have made, and store the originals in a safe place against the eventuality that your backups fail.

Copying disks on the Amiga is easy, although if you only have one disk drive it can take a little bit of time. In the following description, I'll assume that you only have one floppy disk drive.

First, boot the machine up as normal (this simply means 'switch it on and put in the Workbench disk when you are told to do so'). Then insert the disk that you want to copy. Move the pointer over the disk's icon, and click on it once with the left-hand mouse button. The icon should change colour. Now, using the right-hand mouse button, go to the Workbench menu at the top of the screen and select the Duplicate option. A requester will appear asking you to replace the Workbench disk. Do this. There is no need to click on the 'Retry' box (although you can if you really want): the Amiga will realise when you have inserted the correct disk.

You will then be asked to insert the disk that you want to copy. Having done this, you will be asked to insert the 'SOURCE' disk. Actually, this is exactly the same as the disk that you want to copy. If you are sure you have inserted the right one, click on the Continue gadget in the requester with the left-hand mouse button. The Amiga will start reading the information from the disk, keeping you informed as to how much of the reading it has done and how far it still has to go.

After a time, you will be asked to insert the 'TO' disk. Insert a spare disk, but be sure that there is nothing on it which you want to keep, since all of its original contents will be lost. Once this disk is inserted, click on the Continue gadget. The Amiga will start writing the new information to the disk.

Once this is done, you will be asked to insert the SOURCE disk again. This process of swapping disks will continue until the whole of the original disk has been read and susbequently written to the new disk. After this, the new disk will be named as 'copy of [name of original]'.

It is usually a good idea to rename the disk as something more sensible. To do this, select the disk by clicking once on its icon with the left-hand mouse button, then go to the Workbench menu and select the Rename option. Delete the text of the old name in the box provided, and then type in the name by which you want to refer to the disk. When you are done, press the [Return] key and the whole process is finished.

THE SHELL

Although most things that would ordinarily require a keyboard can be done on the Amiga using the mouse and WIMP system, there are nevertheless hidden depths which can only be accessed by means of good old typing. These functions are performed by using the Shell, which has an icon that looks like a miniature window.

Older versions of Workbench (version 1.2 and below) don't have a Shell. Instead, they have a CLI (standing for Command Line Interface), which works in pretty much the same way but lacks some of the Shell's more advanced features and is therefore a bit more awkward to use. The CLI's icon looks just like that of the Shell, and may be found in the System drawer of the Workbench disk. If it is not visible, the Preferences icon must be clicked on (inside the Preferences drawer). Once loaded, Preferences will display a screen-full of options, one of which will refer to the CLI. Click on this, and next time you look in the System drawer the CLI will be there, ready and waiting.

Clicking twice on the Shell or CLI icon will open a text window on the screen. It is generally a good idea to enlarge this window so that it takes up all of the screen, since a lot of text can be generated when you are working here.

A full description of what can be done in the Shell is really beyond the scope of this section, but we'll give you a quick taster. One of the most used commands is the 'directory' command, which gives a list of files (programs and collections of data) on a disk. When the Shell opens, you are presented with a 'prompt' inside the window. At this prompt, type the word 'dir' and press the [Return] key.

The disk will whirr, and you will be given a list of all of the files on the disk. You may be surprised to find that there are a lot more files than there are icons when viewed from an ordinary window. For a file to be shown as an icon, it must have a corresponding file with the same name but followed by the characters '.info'. This second file contains information about the icon, such as what it looks like, what kind of file it represents, and where on the screen it should be displayed.

Some filenames have the characters '(dir)' after them. This is not part of the name, but an explanation that the file in question is not a file at all but a directory. A directory is exactly the same as a Workbench drawer. Things are held within it. For example, on the Workbench disk there is a directory called 'c' (standing for 'commands'). This is not visible except from the Shell, because there is no corresponding 'c.info' file and therefore no icon. To find out what is in this directory, type 'dir c' and press [Return]. What is displayed is a list of files. In this case, each of them is a program which you can run by typing its name in at the Shell prompt. If you look closely, you will find a command called 'dir', which is the one you have been using to look at the Workbench disk's contents. For more information about the Shell, check out Mark Smiddy's monthly AmigaDOS column. AS

IN NEXT MONTH'S ISSUE...

Every month in *Amiga Shopper* we print 16 pages of Amiga Answers – answers for everyone from beginners to experts. If you have a question, fill in the form on page 50 and pop it in the post to us.

Amongst the questions we intend to answer in next month's issue are the following:

- **"How do I write an adventure game in AMOS? I've designed the basic game play, but when it comes to programming it, I haven't a clue where to begin!"**
- **"I need a computer on which I can type text in the Cyrillic alphabet. Should I buy an Amiga?"**
- **"I've heard that the A500's PSU is not powerful enough to drive more than 1Mb of RAM and a single floppy drive? What would happen if I upgraded the power supply?"**
- **"Why does my machine Guru every time I ask it to print?"**
- **"I'm using a 386 PC at work, and I've heard that the KCS Power PC board is the best option for the A500 – is this true and why?"**
- **"Why won't my machine boot from the recoverable RAM drive?"**
- **"When I set my battery backed-up clock from preferences, it refuses to keep the correct time, even though I know the battery is fully charged. Why?"**
- **"Can you recommend a good 52Mb hard drive – I can't get a straight answer from anyone?"**

Veni, Vidi, Vici. A Beginner's Guide



"It's astonishing what you can achieve with a little time and effort on your Amiga. If you're a beginner, then look no further. I'm here to sort out some of those niggling little problems you may encounter."
Gary Whiteley

If you fancy being the next Scorcese or Spielberg, Desktop Video on the Amiga could be the answer.

If Julius Caesar had the technology we've got today you can bet that his suitcase would have been bursting when he returned to Rome after his European tour. Multi-media presentations for the generals, some Charlton Heston movies for the kids and a few tapes he'd rather not let the wife see! And all produced in-house by his team of media aides.

Much of the terminology of today's desktop video world is based on words coined by the Romans. But the technology is more recent – and there's now such a wide range of hardware and software that it's often hard for the aspiring DTV-er to know where to begin.

So how do you conquer the video world? What kind of equipment do you really need? And how much should you spend? How does it all fit together? How do you put captions on video, digitise the family or use graphics in your presentations? These are all some of the subjects I'll be taking a look at over the coming months.

GETTING STARTED

To become involved in DTV there are a few obligatory requirements. You'll need a source of video images, for example a video camera, VCR or laserdisk and a computer capable of displaying good quality graphics – in this case we'll naturally assume it's an Amiga. You'll also require a way of combining video and graphics together – usually a genlock – and finally a way of displaying the combined signal, such as a TV or monitor.

Since many Amiga owners should at least have access to some form of video equipment, then the most likely extra will be a genlock. There are several budget models available now which would be ideal for beginners, but if you think that DTV is going to become probably much more than a hobby you should think seriously before you buy – a better quality genlock should last for years and may well include all the facilities you'll ever need.

Additional items would then include some graphics software, such as paint, titling, modelling, animation or presentation programs. As a good starting point I would recommend *Deluxe Paint* (*3* or *4*), since titles, graphics and animation can all be done reasonably easily with it.

You would also benefit from having extra memory fitted to your Amiga since video applications now tend to get quite chip hungry, especially where animated logos and titles are concerned. A hard drive will also help speed things along a good bit, particularly where large files or presentation sequences are going to be needed. So if you have a standard Amiga and are thinking seriously about DTV, think also about adding a hard drive unit which has space for extra memory.

From this point on there are increasing degrees of sophistication (and cost) all the way up to broadcast quality. You can add a camera, digitiser, more VCRs, special effects, a PAL Video Toaster (if and when it arrives), dedicated 24-bit devices and much more. Be warned – DTV can seriously damage your wealth! But if you simply want to make a start in DTV there's actually quite a lot you can do with the basic setup described above.

For example, such a system would allow you to add graphics and captions to video images. With some preparation and care you should be able to play back a video tape and add descriptions, scores, names and dates and the like and keep them reasonably in time with the pictures. This will require practice and patience and a knowledge of the contents of the video tape would be extremely helpful. The resulting show could be viewed 'live' or recorded to a second VCR for posterity.

How would you go about this? Remember – it only sounds complicated. Preparation and coordination are more important than creativity.

Start by selecting the video tape you wish to illustrate. Run through it, noting the areas where you wish to add captions, graphics and so on. Try to get an idea of the timing and rhythm of the tape, as it is easier to remember how something goes than trying to time it and follow written notes later.

Once you've run through the tape, decide on the actual content of your graphics and captions, bearing in mind that you should generally keep things simple. There's no point in having a video picture obscured by lots of tiny, unreadable text. Captions should be clear, concise and only used when necessary. They

HINTS & TIPS • HINTS & TIPS • HINTS & TIPS

To make a colour bar which closely resembles a professional one load up *Deluxe Paint*, set the screen size to low res overscan (352 x 290) and define the following colour palette:

Position	Red	Green	Blue	Colour	Visual Description
0	0	0	0	Black	Black
1	14	14	14	White	White
2	10	10	0	Yellow	Mustard
3	0	10	10	CyanPale	Blue-green
4	0	10	0	Green	Bright green
5	10	0	10	Magenta	Purple/violet
6	10	0	0	Red	Mid pillar-box red
7	0	0	10	Blue	Almost royal blue

Then make 8 vertical columns 44 pixels wide (that is, 352-pixel screen width divided by 8 equals 44) in the following order – white, yellow, cyan, green, magenta, red, blue and black. And that's it – a pretty accurate colour bar to give that professional look to the start of your tapes.

Making the colour bars is the easiest part – using them requires a knowledge of what they should actually look like. This is a chicken and egg situation, since you have to adjust the monitor you view the bars on before you know the colours are actually right! Try setting up your monitor using my descriptions of the colours above. I know this is difficult as these are how I see them. On the other hand you may be lucky enough to find a printed colour bar in the technical sections of your local library. Use this to make comparisons with the screen above.

Once memorised though, you should have no difficulty setting up any TV or monitor correctly – essential if you are doing video graphics or editing.

should also be readable from, say, a distance of 10 feet. Remember that something you can read from 2 feet away when you are preparing it may not be legible from normal viewing distances. Avoid the use of strong colours and choose those which do not disappear into the background. Use shadows or outlines if necessary.

If you use *Deluxe Paint* (of which I am assuming you have some prior knowledge), for this example, you should make certain that you set the screen size to overscan in whichever resolution you choose. Overscan is the term for a screen display which reaches past the visible edges of the video screen, ensuring that all the screen is safely covered, as is normal with video. If you were to work with a screen smaller than overscan you may see such undesirable affects as animations being displayed on less than the full screen – especially noticeable when a graphic is genlocked over a video background, giving the impression of a border around its edge. Where text travels across the screen in an animation it will appear perhaps an inch from the edge of the screen and disappear at about the same point on the opposite edge.

Of course, if you are certain that you will not need your graphics or animations to reach the edges of the screen then you can dispense with the Overscan size. Doing this would generally free up memory (especially valuable on low-memory machines), giving you the extra possibilities of more colours or frames of animation.

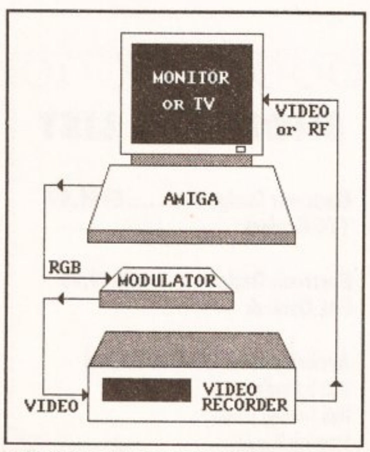
If you don't have much memory use fewer colours. You can often achieve good results with 8 colours or less. Text, for instance, may only require a 2-colour palette. But use the highest resolution possible, as this will improve definition. Since the result of this exercise will be an animation file it is important that you plan ahead and determine both resolution and palette size before you start, as later changes will not be possible without starting over.

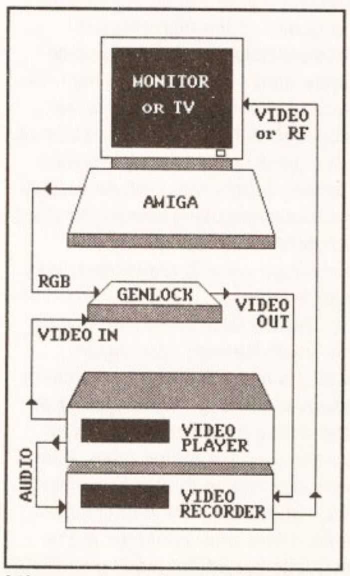
First, set up a series of blank frames (with the first palette colour –Colour 0 – as the background colour) at your chosen settings. Leave the first frame blank, then design a title screen for your video. How you fill the next frames depends on how you would like them to appear and disappear on screen, what capabilities your genlock has, and how the actual sequence runs.

For instance, you may require a series of captions to translate or otherwise explain the action taking place on the screen. You will probably be familiar with TV subtitling – keeping things simple, easy to read and understand. So design your captions with simplicity of understanding in mind, keep them all in the same small area of the screen (eg the lower fifth) and prepare them in small, coherent chunks.

Treat each caption as a separate page and create the graphics and information required. Save the animation regularly as you build up the work.

When the graphics are finished connect up the video and genlock (always switch off the power before plugging equipment into the Amiga). Play the video and add the animation from Deluxe Paint, setting the genlock so that the Amiga graphics show over the video pictures. You can then step through the frames of the animation one by one using the 1 and 2 keys, adding the correct captions at the right time. With a little practice you should soon be pleased with your first steps into DTV and starting to think of your own ways of doing things. AS





Left: A modulator is both the cheapest and the worst way to get video from your Amiga. You'd be far better off with a budget genlock instead, since you could use it for DTV as well.
Right: A basic system for mixing graphics and video via a genlock.

Pal & Y/C Genlocks

What's it to be, Pal or Y/C? All the latest on the new genlocks to arrive from Germany.

At last some of that German hardware I mentioned back in Issue 3 has made it to the UK – so this month I'll be evaluating a brace of genlocks from Electronic Design.

Aimed at Amiga videophiles up to semi-professional level, the choice is between a Y/C (eg for the S-VHS) model and a standard, composite, genlock (the 'PAL' model). As both are very similar in shape, size and features I'll describe them simultaneously, pointing out any design differences where necessary, and then appraise them in a similar way.

Both genlocks have the same basic design, each having a sturdy, beige coloured, plastic case about 8.5 x 6 x 2.5 inches in size with five knobs and two switches on the front panel and the video connectors, RGB port and optional 12V power input on the rear.

The only visible difference between the two (apart from the names and the colours of the knobs) is in the number of video connectors – with the Y/C model having two standard Y/C miniDIN connectors in addition to the two composite sockets.

Both models feature built-in colour splitting, colour processing controls, key invert and the ability to convert the input video signal to RGB or the RGB signal to PAL or Y/C respectively.

The colour splitting feature could be useful if you need to digitise images (for graphics, for instance) from still video images, either from camera or tape. Operation is carried out manually, switching to each colour separation in turn as required by the digitising software.

The colour processing controls – Colour, Contrast and Illumination (brightness) – mean that it is possible to adjust the various parameters of the input video signal, just as you can adjust the settings of your TV set. So you can turn all the colour off if you like (for black and white effects), or attempt to salvage a picture with poor contrast, for example. There are two points to watch here though – firstly, if your original picture is poor you won't really be able to improve it that much, though a little may be all you need and secondly, make sure that any TV or monitor which you are using to view the adjusted signal is set correctly (using colour bars, for instance) otherwise you will have no idea how the changes you are making actually affect the video signal. While Colour and Contrast affect only the incoming video, Illumination alters the entire genlocked signal (the video output).

The remaining two knobs on the front panels are for setting the level of fading (Fade) and superimposition (Mode) of the graphics and video signals. They work in tandem, with the position of one affecting the function of the other as follows:

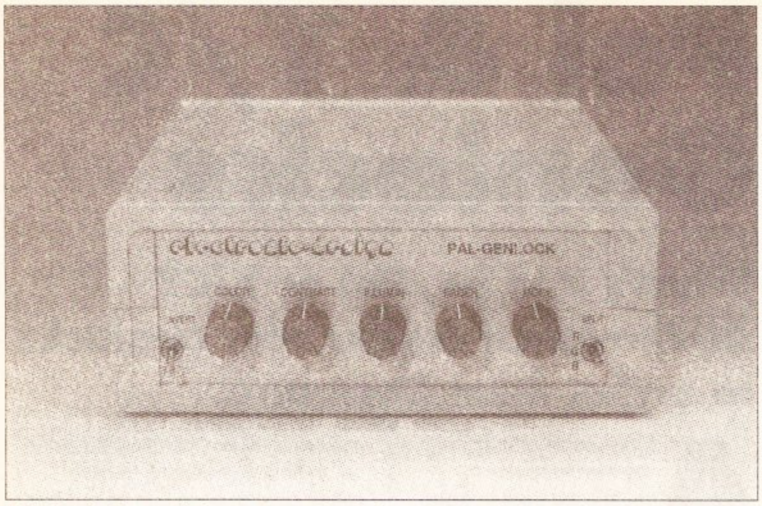
Mode set to Left: Fader used to fade from graphics to video and back.
Mode set to Right: Fader used to fade graphics up and down

continued on page 74

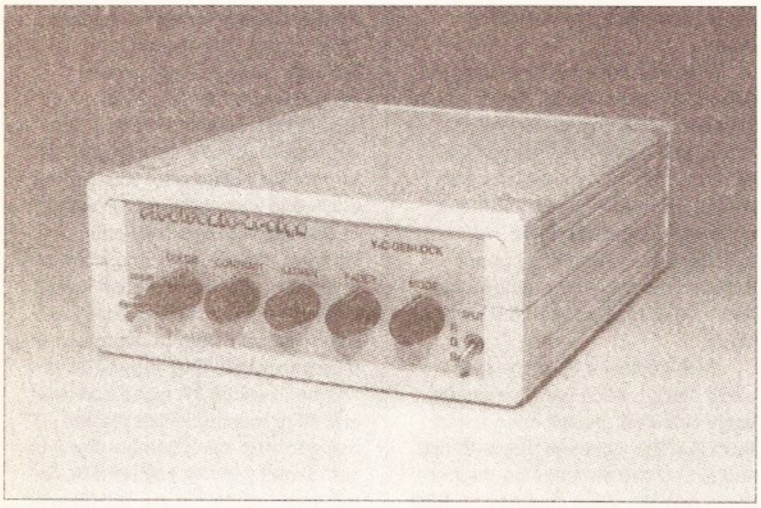
Jargon Busting • Jargon Busting

Colour Splitter – A device for electronically splitting a colour video signal (from camera or still video into its red, green and blue components for input to a digitiser capable of working in colour.

Y/C – The format for an S-VHS (or Hi-8) video signal where the brightness (luminance) and colour (chrominance) components are processed separately, resulting in a system vastly superior to standard VHS (composite) video and probably of equal quality with some older 'industrial' formats such as lo-band.



PAL-Genlock – switches automatically into the genlock mode at the presence of a signal.



Y/C-Genlock – Video and Y/C inputs switch automatically to Y/C or video.

Fader set to Left: Mode has no function.
Fader set to Right: Mode used to fade video to and from black.

The last item on the front panel is the Invert switch, which reverses the order of the 'key' produced by the genlock. In normal operation the key colour (the one replaced by the video signals) would be the first colour in the palette, known as Colour 0. In Invert mode the situation is completely reversed, with video replacing all the colours which are NOT Colour 0, making it a handy way of producing masking effects (such as the ubiquitous 'binocular' effect favoured by many cheap war films).

Round the back, each genlock has at least three video sockets (all in the form of recessed Phono-type connectors) for Video In, Video Out and Mono – the monochrome output required for colour splitting to a digitiser. There's also an integrated flying ribbon cable, which is about 2 feet long, to connect to the Amiga's RGB Monitor output, a 23-pin RGB socket to connect to an RGB Amiga monitor or other RGB equipment of your choice and a mini-jack socket for connecting an optional external 12V power supply, which may come in handy, should you choose to use the genlock as a Y/C or composite to RGB encoder but don't need to use an Amiga. Additionally, the Y/C model has two miniDIN sockets for connecting Y/C in and out. When both composite and Y/C signals are fed to the Y/C Genlock the input will automatically switch to the Y/C socket, as this is the better quality signal of the two. Both the composite and Y/C outputs remain available for use.

FREE SOFTWARE

Included with the Y/C Genlock is a cut-down version of a German program called *VideoPage* which would normally cost DM 199 (about £70) complete. I'm just wondering what it's doing over here, as the program is mostly in German and, as far as I know, not available in the UK either. Still, it works (though I did get locked out a few times) and it's worth DM 40 off the full version if you really want to buy it after you've tried it out.

UNDER TEST

I gave both units a thorough testing – from genlocking to digitising – using both composite video and S-VHS (where appropriate) and I have to report that on the whole I found both units simple to use and of good quality. I had mixed feelings about the quality of the digitising (via DigiView Gold, which I am usually happy with) – with S-VHS in high res black and white the results were excellent, but poor with low res HAM, with interlace HAM falling between the two. Quality was understandably reduced when using composite video simply because the quality of composite video is measurably less than S-VHS.

The manuals are an interesting mix – with German and English sections and a few odd translations. However, although the diagrams are also a little hybridised, there's no problem understanding them. But while attempting to digitise some video stills I was left scratching my head. There was a mistake in the instructions and the result was that I digitised a few blank screens before twigging that the fade knob should be turned in the opposite direction to that stated! AS

LIKES & DISLIKES • LIKES & DISLIKES

DISLIKES:

- **I'm still not keen on Phono plugs for video use – they're awkward to release sometimes and they just don't feel right.**
- **I've got reservations about the long-term durability of the integral flying ribbon cable (a rounded shielded cable would be stronger).**
- **With the PAL Genlock I had it wasn't possible to completely fade the graphics out; a 'ghost' was always present .**
- **There was an edging effect on the graphics, dark on the right and light on the left and though this is not at all desirable, it could be used to advantage if a light embossing is required.**

LIKES:

- **Good quality build, in a heavy duty box which might just stand a 'drop test', though I don't recommend it.**
- **Good range of useful features on board – the processing controls especially useful for adjusting picture characterstics**
- **The digitising feature is useful if you have a colour camera or video with still pause and plan to digitise in colour.**

CHECKOUT PAL GENLOCK

Documentation ●●●○○
As for Y/C Genlock.

Construction ●●●●○
As for Y/C Genlock.

Features ●●●○○
As for Y/C Genlock.

Quality ●●●○○
For some reason the composite video on this genlock seemed to be worse than that of the S-VHS model.

Price Value ●●●○○
Again, reasonable value when all the features are taken into account.

Overall rating ●●●●○

When considering this genlock, you should ask yourself whether you need the extra features. If you do, think about this one seriously. If not, perhaps you should look elsewhere..

CHECKOUT Y/C GENLOCK

Documentation ●●●○○
Sometimes a little quaintly translated but definitely useful.

Construction ●●●●○
Generally rugged and compact.

Features ●●●●○
For the price range these are well-equipped genlocks.

Quality ●●●●○
Room for some improvement

Price Value ●●●○○
I reckon this is reasonable value for money.

Overall rating ●●●●○

The higher price reflects the better quality of this model. If you need S-VHS, composite, RGB splitter and some processing ability, check this one out.

SHOPPING LIST

Electronic Design Pro......£449.99
Y/C Genlock

Electronic Design.........£349.99
PAL Genlock

Available from Genlock Limited
Unit 8,Bradley
Hall Trading Estate
Standish,Wigan
WN6 0XQ.
☎ 0257 472887

Scala 1.1

POWER TO YOUR DIGITS

As an update to my review of *Scala* in *AS* 2, I'm taking a look at what's new and what's mproved in the latest version of Digital Vision's presentation software, available free to registered owners.

All you get is a single disk. Doesn't sound like much, even for nothing, when *Scala* originally arrived as 8 disks. But look at the ReadMe file and you'll find some big changes – only to the program, not to the fonts or backgrounds.

What worries me most is that this upgrade seems to be more concerned with the Amiga 3000 than with the older machines – for instance *ARexx*, outline fonts and the intensive processing required for anti-aliasing and scrolling all point to a memory-packed A3000 as the ideal machine for *Scala 1.1*. Does Digital Vision know something we don't about the lifespan of the pre-A3000 machines? The rest of us don't even know when we can get WB2 and ECS upgrades, never mind outline fonts! But this isn't Digital Vision's fault. So, as they say, on with the show!

IONING

If you're fortunate enough to have a Canon ION still video camera then *Scala* can now control it – though you'll also need a special video interface. To explain, the ION is an electronic camera which records up to fifty video 'stills' on to a microfloppy disc and outputs the data as video images. The quality is very good and reproduction is fine on an Amiga because the data is passed as RGB (I think) for the best quality. The only drawback is that they're definitely *not* cheap at over £1000 for camera and interface.

With the new anti-aliasing feature you can choose from three levels of 'smoothing' for text and brushes. But unless you've got a souped up machine (or A3000 – see above) then you'd do well to save and use each finished page as an IFF picture file to avoid the otherwise inevitable slowdown while anti-aliasing takes place. Alternatively, pre-aliased Colorfonts are faster and just as easy to use.

The scrolling feature will allow you to produce text and graphics which roll smoothly up or down the screen. I've seen this working well on an A3000, but it stops and pauses at every page break on my Amiga 2000, even with ordinary, jaggy-edged text.

Now that I'm slowly getting to grips with *ARexx* I was happy to get the example programs running, even if I did have to alter them a little to take account of my hard disk paths (though this is fairly easy if you have a tiny bit of programming knowledge). What the inclusion of *ARexx* support means is that you can drive the *Scala*Player from script-based *ARexx* programs in a similar way to Scala's own VISUAL language. As an example of what is possible, one of the demo files will scan a disk directory, load a *Scala* background picture, then display all the file names over the background before exiting back to the CLI.

Some other new transitions have been added – A-Z will allow you to run through all the available transitions (so you can see what's there or add variety to repetitive sequences) while SuperImpose will smoothly cross fade from one image to another, provided you conform to certain colour palette constraints.



The three levels of antialiasing now available in *Scala 1.1*. The edges of bitmap images (including text) are progressively built up with lighter tones to give a smoother appearance.

Other additions have been made to improve productivity. The number of hot keys has been increased to ease moving about from page to page and to set other functions such as anti-alias level, layout boxes and page redraw. The underline feature has been extended and all users will notice faster loading of pages from memory, though once again A3000 power users come off best, benefitting from a 5-fold increase in speed when loading pictures and animations. There's also something called Automatic Popularity buffering, which will automatically retain the most popular images from, say, a set loaded in RAM for an interactive display, helping to make retrieval of oft-used images much faster and more accessible.

Something which isn't yet of much use to UK-based users is the inclusion of a controller for Videocomp's excellent DVE-10 vision mixer and genlock from Germany (see Amiga '91 Berlin article in *AS* 3 for more details), though I'm told it may soon be available in this country.

Finally, an undocumented item. If you have any *Soundtracker* songs or 8SVX files it's possible to load them as you would a background image and have them played back as part of your presentation. This is undocumented because Digital Vision wasn't completely happy with the results, though a future release should see this feature completed and officially acknowledged.

In use, the upgrade appears to be faster than the original, and many of the transitions are now very smooth. But on my unmodified Amiga 2000 with 3Mb memory (inc 1Mb CHIP RAM) some effects, are still pretty jerky. Nevertheless, commendations to Digital Vision for continued support for *Scala* and I hope they keep on improving and adding to it.

Gary Whiteley is drgaz @CIX – 081-390 1244

NEW FEATURES • NEW FEATURES • NEW FEATURES

- **Real time anti-aliasing of text, brushes and colorfonts**
- **Continuous credit scrolling transition**
- ***ARexx* support**
- **Canon ION camera Stillvideo control**
- **ANIM Real Time buffering**
- **Colorfont support**
- **Full support for outline fonts under WB 2.1**
- **Automatic remapping of brushes and colorfonts**
- **Automatic remapping of brushes and colorfonts**
- **Superimpose transition**
- **A-Z transition**
- **Show layout boxes function**
- **New controls for remapping, underline air and underline position**
- **The loading speed on the A3000 has been optimised, and is now about 5 times faster**
- **Automatic popularity buffering for interactive applications**
- **New function keys**

SHOPPING LIST

Scala 1.1 .... £225
from good Amiga software dealers including:

Silica Distribution Ltd
1-4 The Mews
Hatherley Road
Sidcup, Kent DA14 4DX
☎ 081-309 1111
or as an automatic free upgrade for registered owners of *Scala 1.0*

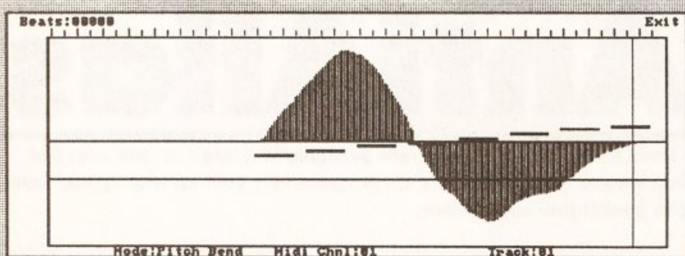
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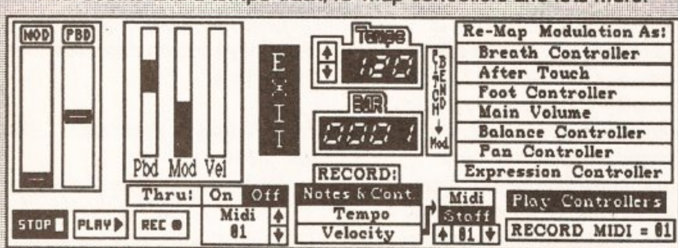


A Midi Event Editor to allow you to send any midi event



NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14
S10n	F0	44	03	00	70	51	21	F7						
S10f	F0	44	03	00	70	51	20	F7						
S20n	F0	44	03	00	71	51	21	F7						
S20f	F0	44	03	00	71	51	20	F7						

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Card sharping

Amiga at the ready, Jeff Walker gets into the festive spirit with a prudent plan that would make Scrooge turn in his urn!



"With the festive season being underway, now is the time to show off your DTP skills to your nearest and dearests."
Jeff Walker

PRO PAGE RETURNS

Version 2.1 of *Professional Page* has at last turned up. As I said last month, it's not a major upgrade, just some bug fixes and a couple of new features.

New additions are in the Print to Dot Matrix requester. Underneath the Output Scale gadgets are two new gadgets for X and Y offset enabling you to offset pages from the top left-hand corner of the page: a bonus for DeskJet and LaserJet owners as their drivers printers are infamous for their page offset problem.

Next to the Eject Page button is a new one for Landscape printing. The fact that earlier versions couldn't print sideways to dot-matrix printers was a thorn in *PPage*'s side, but now all you A5 pamphlet creators can design A5 spreads on-screen and then print sideways on to A4 paper. Ditto for A4 spreads on to A3, provided you have a suitable printer.

The bug fixes are mainly to do with the Compugraphic font handling. Earlier versions tend to screw up the dot-matrix output of fonts at 300 and 360 dots per inch, particularly those greater than about 100pt.

Total re-organisation of the CG font handling has ensued. Gone from version 2.1 are the CacheEdit program and the Compugraphic Font Control item in the Preferences menu – they are no longer needed.

The good news is that this rewrite has had the effect of speeding up the screen refresh rate throughout. The bad news is that when I asked the new version to output some 250pt text at 360 dpi to my Canon bubble jet I got large, empty boxes on the page with tiny letters in the corner of those boxes. In effect, this means that the bug has not been totally eradicated, although I have managed to perfect 150pt dot-matrix output from 2.1, something which screwed up 2.0A.

Version 2.0A also upset every user who came across it by refusing to load a document now and then, claiming that it had been corrupted. This has been fixed in the new version, and Gold Disk tells me that 2.1 will actually load documents which 2.0 says are corrupt. Not having any corrupted 2.0 documents, I haven't verified this yet.

So, the big bug is fixed, the fonts bug is partially fixed, dot-matrix landscape works well and I could kiss Gold Disk for the faster screen refresh.

There's confusion about the upgrade policy at present. UK distributors HB Marketing (☎ 0753 686000) tells me that a 2.1 upgrader disk will be available for a 'nominal' charge, although whether you'll be able to get it from HBM over here or only direct from Gold Disk in the States is unclear. In a perfect world Gold Disk should have contacted all registered users by now with details of the upgrade, but past experience suggests that if this does happen, it won't happen quickly. Your best bet is to get on to HB Marketing to show them that there are enough people to make it worth-while stocking the upgrader pack.

The actual 2.1 release – in other words what you (should) get if you go out and buy *PPage* today – also includes a help disk for beginners, put together with Gold Disk's HyperBook program. The help disk won't be included in the upgrader pack as it is felt that upgraders will be experienced enough not to need it. However, if you're desperate for the help disk I know for certain that it is available for download free of charge from a couple of US-based bulletin boards, CompuServe and BIX. What we need is an enterprising UK public domain library to contact Gold Disk and ask for permission to include the *PPage* help disk in its catalogue, thus making it easily available to anyone who wants it.

TOUCH-UP GROWS UP

Just one more snippet before we go on to this month's tutorial. GoldenImage (☎ 081-365 1102) tells me that version 2 of the *Touch-Up* software is now available. I'm waiting to receive a copy so I'll tell you more next month. But, the phrases 'custom screen' and '*Workbench 2.x* compatible' sugggest it may well be worth the £20 upgrade price.

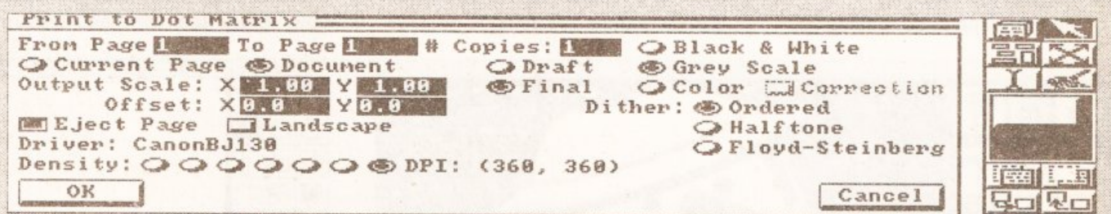
The US company which produces *Touch-Up*, Migraph, is also to release an A4 scanning tray and *Merge-It* software to scan and merge together A4 pages which are in 2 halves. It will be available in the UK through GoldenImage. Again, I hope to have more news of this next month.

And Migraph is at this moment putting the finishing touches to its *Optical Character Recognition* (*OCR*) software which, when used in conjunction with the A4 scanning tray and Merge-It, will allow you to scan an A4 page of words and convert it into an ASCII text file. Don't expect it to appear until early next year though. All I can tell you at the moment is that it will have an Omnifont engine meaning it should be at least 98 per cent accurate.

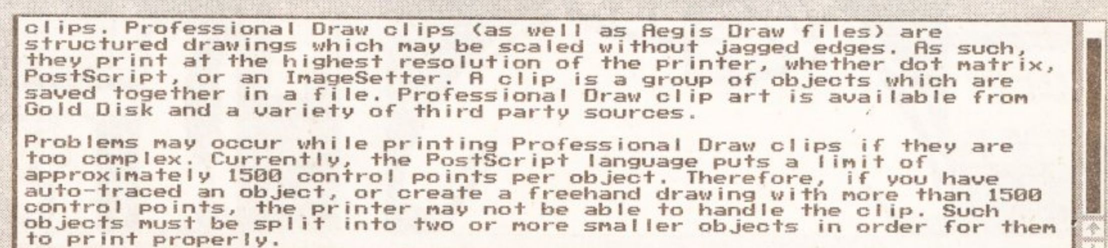
UK pricing for these 2 new packages is undecided at the moment. The A4 scanning tray and *Merge-It* software is selling in the States for $99 (add $21 shipping to the UK), and the figure of $299 is being bandied about for the OCR software, which is about £170.

One last piece of news from Migraph concerns a 'Scanning Utility' which appears to be a simple, erm, scanning utility. Basically it's *Touch-Up* without the arty bits. If you're low on memory *Scan-and-Save* will let you increase the available scan length because it uses less memory than *Touch-Up*. It costs £20 from GoldenImage, or $20 plus $8 shipping from Migraph if you want to do things the hard (but cheaper) way.

continued on page 78



The only thing that looks any different in *PPage 2.1* is the Print to Dot Matrix requester, with two new Offset gadgets and a Landscape button.



As well as teaching you about *PPage 2.1* the new help disk includes details of all known problems with versions 2.0 and 2.0A, with suggested practical workarounds.

continued from page 77

A CARD UP YOUR SLEEVE

OK, on with this month's tutorial. As it's close to the festive season I thought we'd have a go at designing an *Amiga Shopper* Christmas card. Yeah, I know it's corny but it's the techniques we learn on the way that count, not the card itself.

We're going to use 2 pieces of software, *Touch-Up 1.1* and *Professional Page 2.1*, but as always there's more than one way to do it. You could use any decent scanner and software in their place, although the exact techniques employed will differ of course.

BIG IS BETTER

First off, we need a design for card. If you're an artist you can draw it yourself using an art package. But remember that IFF bitmapped pictures are a jaggy 75 dpi resolution, and to increase the output resolution we have to scale them down to at least a quarter of their original size. So if you're going to draw it, you'll have to draw it big – at least 2 hi-res screens wide (1,280 pixels) and probably 5 or 6 hi-res screens high (2,000-3,000 pixels).

This poses a problem in that the Amiga doesn't like bitmaps of more than 1,024 by 1,024 pixels very much. To get around this you'll need to use a drawing package like *Professional Draw*, or the drawing part of the *Touch-Up* software.

Of course, if you've a scanner you can cheat and scan in a Christmassy design. I've done that.

So we'll start off by using *Touch-Up* to create the basic image for the front of our card.

The card will be A4 paper folded horizontally in half and then vertically in half again (how all greetings cards used to be produced). This means our image will be half the width and half the height of A4.

The first thing to do is bring up the Page/Clip Information requester and alter the DPI settings to those of your output device; for most 24 pin printers this will be 360 by 360, for DeskJets and LaserJets change them to 300 by 300. After changing the values don't press the Return key, click on the word `DTP', which is a hidden button. You'll see the values in the other gadgets get smaller.

Next we want to make our page the exact size of the image design, so change the IMAGE width and height to 10.50 and 14.85 cm. While you're at it, enter the same figures in the CLIP width and height gadgets.

Now you can click on OK or press Return. *Touch-Up* will ask you if you want to Wipe Out or Adjust the image. Although there's nothing on the page yet, click Adjust anyway so you get in the habit of not clicking Wipe Out, unless you mean to destroy the page. If you see this requester again during this tutorial, for heaven's sake, click Adjust.

Choose Full magnification and activate the clip outlines (if they aren't already) by clicking on the top left icon in the Clips toolbox.

If you are going to draw your design with *Touch-Up*, now is the time to do it. I'm skipping this stage (because I'm a poor artist) to load a previously scanned bitmap into the clip, a snowman from my local paper.

To get the design to fill the whole of the image area, select Ignore from the Load Clip tool. The image will no doubt load in a slightly distorted manner, but I've got a feeling that a distorted snowman is what I want!

I'm going to use the large white area – the snowman's body – to personalise the card with the *Amiga Shopper* logo in there, some words that say Merry Christmas, and along the bottom I want a number of those caricatures of the writers that you see in this magazine.

The caricatures I'm going to scan, and reduce them to about half-an-inch square. I'm going to enclose 6 of them in a black rectangle so that they look like a strip of film.



❄ **Scan the caricatures, saving the part of the image you want on the Christmas card. The Page/Clip info requester tells me it is 1 inch square.**

The *Amiga Shopper* logo has to be scanned, too. That makes 8 scans in all, including the snowman, and therefore 8 bitmaps to load and manipulate in a DTP package, yes?

No. We're going to use *Touch-Up* to place the caricatures directly on to the snowman image and then save the whole thing as one IFF file. If you've got the GoldenImage scanner you can follow along with this bit without having to have the snowman picture, just pretend it's there.

CLEVER CLIPPING

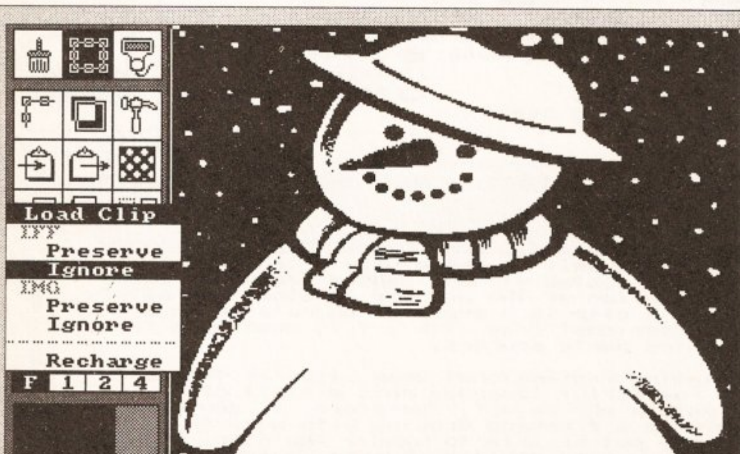
First we'll prepare the black background for the caricatures. Bring up the Page/Clip Information requester again, click on the Inches button, change the CLIP width and height measurements to 3.70 by 1.20 inches and alter the X and Y position measurements underneath to 0.20 and 5.00.

Click OK and you should see the whole outline of the clip area on the screen in a central position close to the foot of the page, provided you are still in full magnification. To turn the area black either select Clip/Set Color/Black from the menu system or choose Black from the Color icon in the toolbox. After a short pause the clip area turns black.

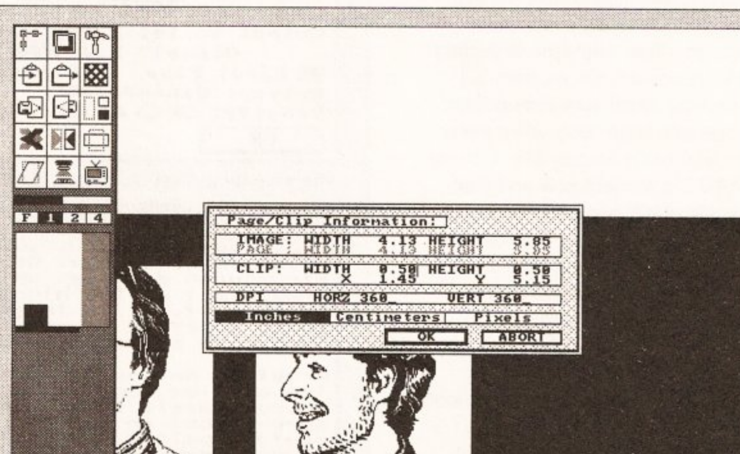
Now we're going to set the clip area to the exact size we want and scan a caricature directly into it. In the Page/Clip Information requester change the clip size to 0.50 by 0.50 and the position to 0.30 and 5.10. Click OK and go into Normal magnification (1). Move the view to the bottom left of the page and you will see the outline of the clip area.

Set your scanner to 200 dpi, Text, and about midway on the brightness wheel. Open up an old copy of *Amiga Shopper* on to a page that has a caricature on it. Position the scanner head so that the front of it lines up with the top of the cartoon; look over the top of the scanner and use the horizontal front edge to line it up with the horizontal top of the picture. Click on the Scanner tool and then the Scan to Clip icon (the one underneath the hammer). The Scan Area requester will probably come up because we've switched to 200 dpi. Just click OK.

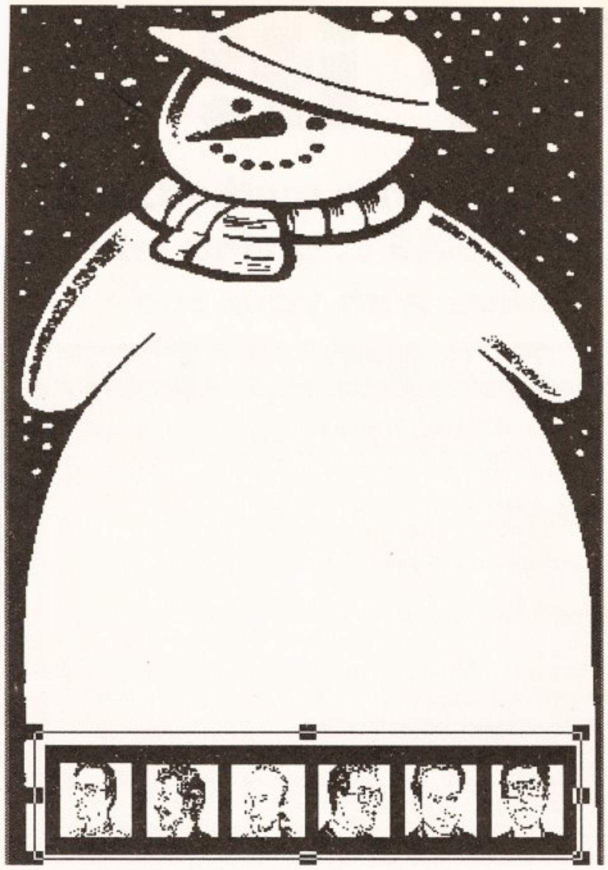
When the green scanner light comes on so that you can see through the cover, line up the scanner so that the left-most part of



❄ **Set the clip area to the full height and width of the page and load your image. Selecting Ignore, the picture may distort, but will fill all the space.**



❄ **Take care with the instructions to make sure the image scales itself to the exact size you require.**



❄ **If the strip is not positioned in the centre, it can be moved by drawing a clip area around it.**

clip area every time. Save the image as you go – you know what the Amiga is like with memory-intensive stuff like this, you don't want to get up to the fifth image and then crash! The only thing left to do now is scan the *Amiga Shopper* logo. Which is easier said than done. The one on the cover is way too large, and anyway the red and blue bits will all come out as solid black. The best bet is the small one on the 'At a Glance Guide' on page 3. I can see that the scan will probably need some cleaning up, so we'll not fix the logo on to the snowman image within *Touch-Up*, we'll import it into *PPage* and position it later.

I managed to get a fairly good scan of the logo at 400 dpi on the Text setting, with the brightness wheel at almost its brightest setting. (You'll have to experiment a bit.) After that I went into the drawing section of *Touch-Up* and used the eraser tool to clean up the stray black dots caused by that grey tint behind the logo.

Now drag a clip area around the logo and save the clip as an IFF.

the picture you want to scan is just visible through the smoked plastic. Check that the front of the scanner is still lined up with the top of the picture, then push the scanner until the green light is shining across the top of the caricature. Hold down the Start button drag the scanner.

Scanning directly and cleanly into clip areas like this is more than a little tricky so an easier way to achieve the same result is to first save your snowman page with the black rectangle on it and then scan the caricature to the full page (which will wipe out the snowman). Then drag a clip area exactly around the caricature, save the clip to disk, load the snowman back, position the 0.5 inch by 0.5 inch clip area on to the black rectangle as before, then load the caricature into that clip area, selecting the Ignore feature so that it fills the square exactly.

NOW FOR A QUICK STRIP

So that's the first caricature in place. To position the next one bring up the Page/Clip Information requester and add 0.6 to the CLIP X position. In this case that means changing it from 0.30 to 0.90.

Now in reality I scanned 6 caricatures and loaded the next one in, but to save yourself time just load the previous caricature into this new clip area. Don't forget to select Ignore, not Preserve. To do the rest simply repeat this second step, adding 0.6 to the X position of the

ENTER PROFESSIONAL PAGE

All we have to do now is put the bits together on an A4 page in such a way that when we fold it the picture is on the front and when we open the card the greeting is inside.

I'm going to use *Professional Page* to do this bit, but as I said earlier you can use *Saxon Publisher*, *PageStream* or *Professional Draw* if you like. The important thing is that the software allows you to rotate text because part of the greetings page of the card has to be upside down.

After loading *PPage* select the centimetre measurement system and then create a standard A4 page. Double click on the box *PPage* has automatically put on the page for you (or create one if it isn't there) to bring up the Active Box requester. In the Width and Height gadgets enter 10.5 and 14.85 and clear out the Position Left and Top gadgets so that they both read zero. Click OK.

Clone this box 3 times by pressing [Alt-K] 3 times. Now double click on the top box and adjust its position to Left 0.0000 Top 14.8500. Double click on another cloned box and adjust its position to Left 10.5000 Top 14.8500. Double click on the last cloned box and move it to Left 10.5000 Top 0.0000.

These are the 4 'faces' of our card. The cross shape in the middle running from top to bottom and left to right shows where we will fold the paper after the page is printed.

The front of the card is the bottom right box, next to it (bottom left) is the back of the card. The box at top right is the page which will back on to the front, the box at top left is the page with the greeting.

Let's deal with that greeting first. Go into 100% magnification (Amiga-2), click on the text tool, click in the top left box and type something like "With every good wish for your happiness at Christmas."

Now decide on a font and style – Times Italic gives a nice traditional look, and 16pt is a good size. So select the text, shoose your font and select Centre justification. It looks a bit silly with 'Christmas' sitting on a line on its own, so put the text cursor just after 'wish' and hit the Return key. That looks much better!

Except that it's at the top of the page and we want it in a more central position. So double click on the box and enter a Top Margin distance of 5.0000. While you're there change the Rotation value to 180 to turn it upside-down.

Now we'll load the front of the card in. Go into 50% magnification (Amiga-3), click once on the bottom right box, select Import/Bitmap Graphic from the Project menu (or Amiga-G) and load in the snowman bitmap which we prepared in Touch-Up. Because we set it up to the exact size in *Touch-Up* it should be a perfect fit for the box. After it has loaded, if you double click the box and look at the X and Y scaling figures. They should be 0.208 if you had the *Touch-Up* page set to 360 dpi, or 0.250 if set to 300 dpi.

If your figures are different from these it means you forgot to set the DPI settings in *Touch-Up* or set up the wrong size IMAGE in *Touch-Up*.

The last job is to put the *Amiga Shopper* logo on to the front. Go into 200% magnification (Amiga-1) and position the page so you can see the row of caricatures. Drag out a box for the logo – any size because we're going to rescale it to suit.

When it has loaded, position the logo box so that the left of the logo lines up with the left edge of the black strip behind the caricatures – by eye is good enough – and position the top of the logo box at about 24 centimetres. Now position the page so that you can see the right-hand edge of the black strip. Hold down the [Alt] key and drag the middle-right handle of the logo box to the right so that the right-hand edge of the logo box is lined up with the right-hand edge of the black strip.

Double click the logo box and check out the scaling figures; the X one should be considerably larger that the Y one. To keep the correct proportions change the Y figure to be the same as the X one, press Return and click OK. Now drag the middle-bottom handle of the logo box down (don't hold Alt) until it is about half a centimetre above the black strip. You should be able to see the whole logo now, if you can't, then drag the middle-handle down a bit more and move the logo box up a bit.

One last thing. Move up the page a little way, drag out a box above the logo, click the text tool, click in the new box, type 'MERRY XMAS' and press Return, then 'from all at' and press Return. Select all that text and centre it. Finally, position that text where you think it looks best.

THE FINAL SUMMARY

We've achieved a lot this month so let's summarise what we've learned.

In *Touch-Up* we mastered to changing the DPI settings to those of our printer before doing any work. This is so the measurements *Touch-Up* gives us reflect exactly the measurements of what we will see on the printed page.

We learned that we can get an image to entirely fill a clip area by selecting Ignore (the aspect ratio) when we load it, and, that we can position clips in exact positions on the page by altering the figures in the Page/Clip Information requester.

Probably the most important knowledge we acquired in *Touch-Up* was that it is much quicker and easier to scan things to the full page, save the part of that image you want as a clip and load the clip into a clip box on the 'work' image.

In *PPage* we found out how to rescale graphics by Alt-dragging handles and by changing the Scale figures in the Active Box requester. We also discovered that it is often easier to position boxes accurately by adjusting the Position values in the Active Box requester.

That's it for this month. Next month details of *Touch-Up 2* and maybe more on that scanning tray and *Merge-It* program. Possibly a review of *SaxonScript* as well. Don't forget to write if you've got any DTP problems or if there's anything in particular you want to know how to do in any DTP-related package. AS

You asked for it!

This month Dean Cracknell looks into methods of building requesters using GFA-BASIC, giving you the opportunity to be more creative with your code.

> **"Most professional software available for the Amiga, and an encouraging amount of PD software, makes extensive use of the mouse to control the program-using gadgets. We show how requesters are built using GFA-BASIC."**
> **Dean Cracknell**

Programs written in BASIC generally create their gadgets using standard BASIC statements. They then determine whether the clicked mouse hit the gadget by reading the mouse coordinates and comparing them with the gadget's coordinates. The extra programming required to achieve this can be avoided if Intuition's own gadget system is employed instead.

In the previous article we covered the finer points of creating Intuition gadgets using system library calls from GFA-BASIC. In doing this the concept of data structures was covered, together with a means of creating them in GFA-BASIC to form individual gadgets of the three basic types: Boolean, string and proportional. To illustrate their use, the examples created small windows containing a gadget or two. Technically, these windows are termed 'requesters', because they are used to request you to do something and wait for you to respond before disappearing.

When creating a control panel full of gadgets, always present on-screen, an ideal approach is the AddGList and RefreshGadgets System Calls. This is because these gadgets do not disappear when de-activated. However, this is an obvious disadvantage for requesters, unless a window is opened specifically for them and closed after the gadgets have been released.

For requesters as simple as those given in this month's examples there are far easier ways of achieving the same end. In GFA BASIC the ALERT statement can be used:

```
ALERT 1,"This is a
requester",1,"OK|CANCEL",a%
```

Using the definitions given in the ROM Kernel Manuals, this is a requester, not an alert. However, it does produce a usable, if unexciting, requester which hangs from the top of the screen and is easily included in a program.

The Intuition system contains its own version of GFA's ALERT, called an AutoRequester. These will be immediately recognisable as those used by the Amiga operating system, which is why they are in the system libraries in the first place.

AUTOREQUESTERS

Listing 1 is a program which creates a simple requester containing two gadgets. The text for the requester and both gadgets is held in data structures called IntuiText structures. These contain the string text, together with the pen and paper colours and the position of the text within the window when displayed.

The AutoRequest system call requires three IntuiText structures to

continued on page 82

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Fish 337: The C Manual (un-arcs to three disks containing an on-disk book with chapters covering many of the system library calls, complete with C program examples for each chapter).

JARGON BUSTING • JARGON BUSTING

ACBM – Amiga Contiguous BitMap; a method of storing images on disk in a format which will load faster than a normal ILBM.

Address – A location in memory where data is stored.

Bitplane – An area of memory containing pixel information.

Bitmap – A list of the bitplanes needed to produce an image.

Border – When referring to windows, the border is the area where the window gadgets are. When referring to the border structure, this is an Intuition structure that defines a simple line-drawn image.

C – A programming language. For more information, see our languafe of the month feature on page 101.

Flags – Data variables that are TRUE to enable an option, or FALSE to disable it. Because a flag will only have two states it can be represented by a single bit in a BYTE or WORD variable, so a BYTE variable can hold 8 flags.

Gadget – Screen areas which do something when clicked on.

GimmeZeroZero – A window format that allows you to write in the window border area.

Guru Meditation – A system alert that occurs when a program gets out of control or attempts something illegal.

IDCMP – Intuition Direct Communications Message Port; this is how the Intuition system talks to programs.

IFF – Interchange File Format; a standard file format that allows data to be transported from one application program to another. IFF formats exist for pictures, sounds and documents.

ILBM – InterLeaved BitMap; an IFF for pictures, supported by all drawing programs.

Intuition system – The part of the Amiga operating system for controlling Workbench operations such as windows, icons and menus.

ROM Kernel – The heart of the Amiga operating system, which is stored in Read Only Memory.

Structure – Another word with two meanings. When referring to a program it refers to the flow through the program, usually meaning the program uses WHILE...WEND constructs and no GOTO statements. When referring to data it is a way of organising different data-types into a manageable form.

System libraries – The files in the LIBS – directory that allow access to the ROM-based routines.

Pointer – Another double-entendre. In the operating system it refers to the mouse pointer, while in programming languages it refers to a data-variable which holds an address where further data can be found.

Render – the way in which a graphic is reproduced on screen.

Requester – a pop-up box telling you to do something.

LISTING 1

Simple AutoRequester Example
Save some memory for the Structures

```
INLINE imsg1%,20
INLINE itext1%,20
INLINE imsg1a%,16
INLINE itext1a%,20
INLINE itgad1%,16
INLINE itextg1%,20
INLINE itgad2%,16
INLINE itextg2%,20
```

Set the requester's message and Intuitext structures

```
@strcpy(imsg1%,"An Autorequester") ! The Requester Text - 1st↵
line
@intuitextstructure(itext1%,itext1a%,2,1,0,20,5,imsg1%)
@strcpy(imsg1a%,"Insert A Disc") ! The Requester Text - 2nd line
@intuitextstructure(itext1a%,0,2,1,0,28,13,imsg1a%)
@strcpy(itgad1%,"OK") ! The First Gadget Text
@intuitextstructure(itextg1%,0,0,1,0,6,4,itgad1%)
@strcpy(itgad2%,"Cancel") ! The Second Gadget Text
@intuitextstructure(itextg2%,0,0,1,0,6,4,itgad2%)
```

Open a Window to attach the Requester and to display various messages...

```
label_1:
idcmp%=&H0 ! See OPENW command in GFA Manual
OPENW #1,0,70,319,70,idcmp%,&HF
TITLEW #1,"Window #1 - with A Requester"
LOCATE 7,4
PRINT "A Window with an Autorequester"
```

Now we can pop-up the Requester

```
label_2:
onflag%=&H0
offlag%=&H0
flag!=AutoRequest(WINDOW(1),itext1%,itextg1%,itextg2%,onflag%,↵
offlag%,200,60)
IF flag! THEN
PRINT "TRUE Selected"
ELSE
PRINT "FALSE Selected"
ENDIF
label_3:
PRINT "Press both mouse buttons to quit"
REPEAT
  SLEEP
UNTIL wclose!=TRUE OR MOUSEK=3
```

Clean up memory

```
CLOSEW #1
CLOSEW #2
END
label_4:
PROCEDURE strcpy(dst%,src$)
  ' this procedure performs the same function as ...
  '          CHAR{dst%}=src$
  ' ... which works fine in the interpreter
  ' ... but doesn't compile properly (for some reason...)
  '
  src$=src$+CHR$(0)
  adr%=V:src$
  leng=LEN(src$)
  BMOVE adr%,dst%,leng
RETURN
PROCEDURE
intuitextstructure(itext%,next%,fp|,bp|,jm|,le|,te|,imsg%)
  ' This procedure fills an IntuiText structure
  BYTE{itext%+0}=fp|                    ! Foreground Pen
  BYTE{itext%+1}=bp|                    ! Background Pen
  BYTE{itext%+2}=jm|                    ! JAM1
  BYTE{itext%+3}=&HA                    ! dunno
  WORD{itext%+4}=le|                    ! Left Edge
  WORD{itext%+6}=te|                    ! Top Edge
  LONG{itext%+8}=0                      ! ITextFont (NULL)
  LONG{itext%+12}=imsg%                 ! The text to be displayed
  LONG{itext%+16}=next%                 ! NextText (NULL)
RETURN
```

LISTING 2

At label_1: modify the IDCMP flag as follows:

```
idcmp%=&H8260          ! See OPENW command in GFA Manual
```

At label_3: modify the PRINT statement and add the ON MESSAGE statement:

```
PRINT "Close this window to Quit"
ON MESSAGE GOSUB what_message
```

At label_4: insert the following procedure:

```
PROCEDURE what_message
  LOCAL wad%,wnr%,msg%,gadptr%,gadno&

  wad%=MENU(9)              ! Window Address
  wnr%=WINDOW(wad%)         ! Window Number
  msg%=MENU(1)              ! IDCMP-Flags
  gadptr%=MENU(4)
  IF EVEN(gadptr%) THEN
    gadno&=WORD{MENU(4)+38}     ! Read which Gadget
  ELSE
    gadno&=0
  ENDIF
  PRINT "Window: ";wnr%;" Gadget: ";gadno&
  PRINT "ICDMP Message :";HEX$(msg%,4);" "
  SELECT msg%
  CASE &H8000
    PRINT "DISC INSERTED"
  CASE &H200
    PRINT "WINDOW CLOSE"
    wclose!=TRUE
  CASE &H40
    PRINT "GADGET ";gadno&;" UP       "
  CASE &H20
    PRINT "GADGET ";gadno&;" DOWN     "
  ENDSELECT
RETURN
```

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be set up – one for the window, one for the TRUE gadget, and the other for the FALSE gadget.

Since GFA-BASIC (version 3) does not have data structures as one of its variable types, they have to be created long-hand in some reserved memory that BASIC will neither overwrite nor attempt to move. In the following examples, INLINE statements are used to allocate the required memory and, to economise on program length, GFA-BASIC procedures are used to write the data into the reserved memory for each structure.

For the IntuiText structures, 20 bytes are reserved for each one and the procedure IntuiText/Structure is used to initialise them. Once the IntuiText structures have been created, the requester can be invoked by calling the AutoRequest system call, which will return the state of the gadgets after they have been clicked. While this

continued on page 84

LISTING 3 • LISTING 3 • LISTING 3 • LISTING 3 • LISTING 3 • LISTING 3

Intuition Requester Example
Reserve memory for gadgets
gadget 1 - a Boolean gadget

```
INLINE my1brdr%,16
INLINE imsg1%,16
INLINE itext1%,20
INLINE my1gad%,44
DIM my1points&(10) ! The Boolean Gadget Box

label_1:
my2gad%=0

label_2:
my3gad%=0
```

Reserve memory for requester

```
INLINE my_r_brdr%,16
INLINE imsg_r1%,40
INLINE itext_r1%,20
INLINE imsg_r2%,40
INLINE itext_r2%,20
INLINE my1req%,120
DIM my_r_points&(10) ! The Requester Box
```

Set-up The Gadget Data – border box-drawing coordinates

```
my1points&(0)=0 ! Gadget Box
my1points&(1)=0
my1points&(2)=70
my1points&(3)=0
my1points&(4)=70
my1points&(5)=10
my1points&(6)=0
my1points&(7)=10
my1points&(8)=0
my1points&(9)=0
```

gadget 1 border structure

```
@borderstructure(my1brdr%,0,0,0,1,0,1,5,V:my1points&(0))
```

The Gadget's message structure

```
@strcpy(imsg1%," ACCEPT")       ! The First Gadget's Text
@intuitextstructure(itext1%,0,2,0,0,4,2,imsg1%)
```

Create the gadget structure

```
ENDGADGET means that this gadget will close requester
flags : GADGEHCOMP = 0
activate : GADHIMMEDIATE | REVERIFY | ENDGADGET = 4+2+1
type : BOOLGADGET | REQGADGET = 1 + &H1000
@gadgetstructure(1,my1gad%,my2gad%,5,36,71,11,0,4+2+1,1+↵
&H1000,my1brdr%,0,itext1%,0,0)
label_3:
label_4:
```

Set up the requester data

```
my_r_points&(0)=0 ! Requester Box
my_r_points&(1)=0
my_r_points&(2)=199
my_r_points&(3)=0
my_r_points&(4)=199
my_r_points&(5)=49
my_r_points&(6)=0
my_r_points&(7)=49
my_r_points&(8)=0
my_r_points&(9)=0
```

Requester border structure

```
@borderstructure(my_r_brdr%,0,0,0,1,0,0,5,V:my_r_points&(0))
```

The requester's message structure

```
@strcpy(imsg_r1%,"This is an") ! The Requester's 1st Line
@intuitextstructure(itext_r1%,itext_r2%,2,0,0,38,4,imsg_r1%)
@strcpy(imsg_r2%,"Intuition Requester") ! The Requester's ↵
2nd Line
@intuitextstructure(itext_r2%,0,2,0,0,16,12,imsg_r2%)
```

Create the requester structure

```
@requesterstructure(my1req%,40,20,200,50,0,0,my1gad%,↵
my_r_brdr%,itext_r1%,0,3)
```

Open a couple of windows to display the gadgets and various messages...

```
icdmp%=&H260 ! only tell me if window is closed↵
or gadget is UP or DOWN
OPENW #1,0,20,320,120,icdmp%,&HF
TITLEW #1,"Window #1 - with Requester"
LOCATE 9,9
PRINT "Close Window to quit"
PRINT
icdmp%=&H0 ! don't tell me anything from this window
OPENW #2,321,20,319,100,icdmp%,&HF
TITLEW #2,"Window #2 - ICDMP Data "
result!=Request(my1req%,WINDOW(1))
IF NOT result! THEN
 PRINT "Intuition could not open requester"
ENDIF
ON MESSAGE GOSUB what_message
iquit!=FALSE
REPEAT
 SLEEP
UNTIL iquit!
```

Clean up memory

```
CLOSEW #1
CLOSEW #2
END
PROCEDURE what_message
LOCAL wad%,wnr%,msg%,gadno&,myflag!
  wad%=MENU(9) ! Window Address
  wnr%=WINDOW(wad%) ! Window Number
  msg%=MENU(1) ! IDCMP-Flags
  LOCATE 1,4
  gadptr%=MENU(4)+38 ! Read which Gadget
  IF EVEN(gadptr%) THEN
  gadno&=WORD{MENU(4)+38} ! Read which Gadget
  ELSE
  gadno&=-1
  ENDIF
  PRINT
  PRINT "Window: ";wnr%;" "
  PRINT "ICDMP Message :";HEX$(msg%,4);" "
  SELECT msg%
  CASE &H20
  PRINT "GADGET ";gadno&;" DOWN     "
  CASE &H40
  PRINT "GADGET ";gadno&;" UP       "
  CASE &H200
  PRINT "Close Window"
  iquit!=TRUE
  ENDSELECT
  IF gadno&=3 THEN
  mybuffer$=CHAR{mybuffer%} ! Read the Text the polite way
  PRINT "Text:(";LEN(mybuffer$);") ";mybuffer$
```

continued on page 84

LISTING 3 • LISTING 3 • LISTING 3 • LISTING 3 • LISTING 3 • LISTING 3

```
  ENDIF
RETURN
PROCEDURE strcpy(dst%,src$)
```

this procedure performs the same function as ...

```
' CHAR{dst%}=src$
```

which works fine in the iterpreter but doesn't compile properly (for some reason...)

```
 src$=src$+CHR$(0)
 adr%=V:src$
 leng=LEN(src$)
 BMOVE adr%,dst%,leng
RETURN
PROCEDURE
borderstructure(mybrdr%,next%,le&,te&,fp|,bp|,dm|,bc|,↵
mypoints%)
  WORD{mybrdr%+0}=le& ! Left Edge
  WORD{mybrdr%+2}=te& ! Top Edge
  BYTE{mybrdr%+4}=fp| ! Front Pen
  BYTE{mybrdr%+5}=bp| ! Back Pen
  BYTE{mybrdr%+6}=dm| ! Draw Mode (JAM1)
  BYTE{mybrdr%+7}=bc| ! Byte Count
  LONG{mybrdr%+8}=mypoints% ! [bc*2] co-ord array
  LONG{mybrdr%+12}=next% ! Pointer to Next Border
RETURN
PROCEDURE
intuitextstructure(itext%,next%,fp|,bp|,dm|,le&,te&,imsg%)
  BYTE{itext%+0}=fp|              ! Foreground Pen
  BYTE{itext%+1}=bp|              ! Background Pen
  BYTE{itext%+2}=dm|              ! JAM1
  BYTE{itext%+3}=&HA              ! dunno
  WORD{itext%+4}=le&              ! Left Edge
  WORD{itext%+6}=te&              ! Top Edge
  LONG{itext%+8}=0                ! ITextFont (NULL)
  LONG{itext%+12}=imsg%           ! The Text to be Displayed
  LONG{itext%+16}=next%           ! NextText
RETURN
PROCEDURE
gadgetstructure(gadno&,mygad%,next%,le&,te&,wi&,he&,flag&,↵
active&,gtype&,grender%,srender%,gtext%,me%,sinfo%)
  LONG{mygad%+0}=next%            ! Pointer to next gadget
  WORD{mygad%+4}=le&              ! LeftEdge
  WORD{mygad%+6}=te&              ! TopEdge
  WORD{mygad%+8}=wi&              ! Width
  WORD{mygad%+10}=he&             ! Height
  WORD{mygad%+12}=flag&           ! Gadget Flags
  WORD{mygad%+14}=active&         ! GADHIMMEDIATE | RELVERIFY
  WORD{mygad%+16}=gtype&          ! BOOLGADGET
  LONG{mygad%+18}=grender%        ! GadgetRender
  LONG{mygad%+22}=srender%        ! SelectRender
  LONG{mygad%+26}=gtext%          ! The Text
  LONG{mygad%+30}=me%             ! MutualExclude
  LONG{mygad%+34}=sinfo%          ! Special Info (NONE)
  WORD{mygad%+38}=gadno&          ! GadgetID (user defined)
  LONG{mygad%+40}=0               ! Pointer to UserData
RETURN
PROCEDURE
requesterstructure(myreq%,le&,te&,wi&,he&,rl&,rt&,rgad%,↵
rbrdr%,rtext%,flg&,bfpen|)
  LONG{myreq%+0}=0                ! Older Requester (set by↵
Intuition)
  WORD{myreq%+4}=le&              ! LeftEdge
  WORD{myreq%+6}=te&              ! TopEdge
  WORD{myreq%+8}=wi&              ! Width
  WORD{myreq%+10}=he&             ! Height
  WORD{myreq%+12}=rl&             ! RelLeft
  WORD{myreq%+14}=rt&             ! RelTop
  LONG{myreq%+16}=rgad%           ! Requester's Gadget
  LONG{myreq%+20}=rbrdr%          ! Requester's Border
  LONG{myreq%+24}=rtext%          ! Requester's IntuiText
  WORD{myreq%+28}=flg&            ! Flags
  BYTE{myreq%+30}=bfpen|          ! BackFill Pen
'                          ! Pad character
'                          ! Requester's Layer (set by Intuition)
'                          ! ReqPad1 [32-bytes]
'                          ! Requester's BitMap (set by Intuition)
'                          ! Requester's Window (set by Intuition)
'                          ! ReqPad2 [36-bytes] (last=112)
'
RETURN
label_5:
```

LISTING 4 • LISTING 4 • LISTING 4 • LISTING 4 • LISTING 4 • LISTING 4

At label_1: in Listing 3, delete the line that says:

```
my2gad%=0
```

and insert the following:

```
' gadget 2 - a Boolean gadget
INLINE my2brdr%,16
INLINE imsg2%,16
INLINE itext2%,20
INLINE my2gad%,44
```

Then at label_3: insert the statements that set up the second gadget:

```
' gadget 2 border structure
'
@borderstructure(my2brdr%,0,0,0,1,0,1,5,V:my1points&(0))
' The Gadget's message structure
@strcpy(imsg2%," CANCEL") ! The Second Gadget's Text
@intuitextstructure(itext2%,0,2,0,0,4,2,imsg2%)
' Create the gadget structure
' ..... ENDGADGET means that this gadget will close requester
' flags : GADGEHCOMP = 0
' activate : GADHIMMEDIATE | REVERIFY = 2+1
' type : BOOLGADGET | REQGADGET = 1 + &H1000
@gadgetstructure(2,my2gad%,my3gad%,120,36,71,11,0,2+1,1+↵
&H1000,my2brdr%,0,itext2%,0,0)
```

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requester is active, the BASIC program stops and waits for a response.

One advantage of AutoRequest over GFA's own ALERT statement is that the Intuition Direct Communications Message Port (IDCMP) messages can be used to answer the requester automatically.

To show the effect of this, at label_2 in Listing 1 set the variable onflag% to &H8000, which is the IDCMP flag for DISKINSERTED (see the OPENW section of GFA manual). Now, when a disk is inserted in the drive while the requester is active it will have the same effect as clicking the TRUE button.

To distinguish between the disk being inserted and the TRUE button being pressed, the IDCMP event can be trapped using an ON MESSAGE GOSUB statement after the requester has been called.

Listing 2 gives the additional statements needed to modify the program.

REQUESTERS

AutoRequesters are adequate for most applications requiring simple two-button requesters, but for more complex requesters, such as those requiring image or string gadgets, a different approach is required. These use yet another data structure called (amazingly) a requester structure.

This structure contains a pointer to a chain of gadget structures which hold the description of each gadget used and a pointer to a border structure that will be used for the requester's background. All the gadgets must have the REQGADGET flag set in the Gadget Type flags and one or more of the gadgets must

LISTING 5 • LISTING 5 • LISTING 5 • LISTING 5 • LISTING 5 • LISTING 5

In the modified version of Listing 3, at label_2: replace the following statement:

```
my3gad%=0
```

With the memory allocation for the string gadget:

```
' gadget 3 - a string-gadget
INLINE my3brdr%,16
INLINE imsg3%,16
INLINE itext3%,20
INLINE my3gad%,44
INLINE my1strinfo%,36
INLINE mybuffer%,42
INLINE myundo%,42
DIM my2points&(10)   ! The String Gadget Box
```

Then at label_4: insert the statements that set up the data for this gadget:

Set up string gadget data

```
my2points&(0)=-5
my2points&(1)=-2
my2points&(2)=130
my2points&(3)=-2
my2points&(4)=130
my2points&(5)=9
my2points&(6)=-5
my2points&(7)=9
my2points&(8)=-5
my2points&(9)=-2
```

gadget 3 border structure

```
'@borderstructure(my3brdr%,0,0,0,1,0,1,5,V:my2points&(0))
```

Create the Intuitext structure:

```
@strcpy(imsg3%,"Name:")! The Gadget's Text
@intuitextstructure(itext3%,0,2,0,0,-44↵ ,0,imsg3%)
```

Create a StringInfo structure

```
@stringinfostructure(my1strinfo%,mybuffer%.↵
,myundo%,40)
```

Create gadget structure
mo GADGET, means that this gadget will ' not close requester

```
' flags : GADGHCOMP = 0
' activate : GADHIMMEDIATE | REVERIFY = 2+1
' type : STRINGGADGET | REQGADGET = 4 + ↵
&H1000
@gadgetstructure(3,my3gad%,0,48,24,128,8,0↵
,2+1,4+&H1000,my3brdr%,
```

Finally, at label_5: add the StringInfo structure procedure:

```
PROCEDURE stringinfostructure(mystrinfo%,sbuffer%,↵
sundobuffer%,leng&)
  LONG{mystrinfo%+0}=sbuffer% ! a Pointer ↵
to the input buffer
  LONG{mystrinfo%+4}=sundobuffer% ! and↵
the undo-buffer
  WORD{mystrinfo%+8}=0 ! BufferPos (CURSOR)
  WORD{mystrinfo%+10}=leng& ! MaxChars
  WORD{mystrinfo%+12}=0 ! DispPos
  WORD{mystrinfo%+14}=0 ! UndoPos
  WORD{mystrinfo%+16}=0 ! NumChars
  WORD{mystrinfo%+18}=0 ! DispCount
  WORD{mystrinfo%+20}=0 ! CLeft
  WORD{mystrinfo%+22}=0 ! Ctop
  LONG{mystrinfo%+24}=0 ! LayerPtr
  LONG{mystrinfo%+28}=0 ! LongInt
  LONG{mystrinfo%+32}=0 ! AltKeyMap
RETURN
```

ave the ENDGADGET flag set in the adget structure's Activation flags so hat the requester will terminate orrectly.

Listing 3 produces a simple equester based upon these rinciples using a single Boolean adget which is rendered using a order structure. Once again, INLINE tatements are used to reserve nemory for the structures, and GFA-BASIC procedures are used to fill hem with data.

Once the requester structure has een set up and appropriate vindows are open, the requester can e displayed using the Request() ystem call – any IDCMP messages an then be captured in the ormal way. (See WINDOW.GFA xample on the GFA-BASIC Interpreter disk.)

To include more gadgets on the requester the additional gadgets are linked into the gadget chain. Listing 4 adds a Cancel gadget to the right-hand side of the requester; this gadget does not have its ENDGADGET flag set so clicking on it will not close the requester, but its state can be caught by the event trap and displayed in the second window.

Listing 5 (see above) goes on to add a string gadget to complete the requester.

DOUBLE MENU REQUESTERS

There is one last type of requester within the Intuition system that can be called from GFA-BASIC – a double menu requester.

This requester is so called because the user has to double-click the menu (right) mouse button to see it; from then on, it behaves like a standard requester. Because double-clicking the right mouse button is not an intuitive action for the average Amiga user, I would never think of looking for this feature, this is probably why I have never come across an application program which uses it.

The requester is set active by replacing the Request() library call with the SetDMRequest() library call. (Note that the arguments are swapped around for this call.) To de-activate it, so that the user cannot pop it open, the ClearDMRequest() function is called.

To see this requester in action take one of the Requester examples (Listing 3, 4 or 5) and modify it as shown in **Listing 6**.

By setting the Request flag to 1 (POINTREL), the requester can be made to pop up at the current mouse pointer position. You then initialise the RelLeft and RelTop elements of the requester structure with the required offset values of the requester position from the pointer position.

COMING NEXT MONTH

Well that's it for this time. Next month, we shall be returning to gadget images and how they are created. We'll also be discussing alerts for the very last time and explaining some of the finer points of super bitmapped windows. AS

LISTING 6 • LISTING 6 • LISTING 6 • LISTING 6 • LISTING 6 • LISTING 6

In Listing 3, increase the size of Window 1:

```
OPENW #1,0,10,640,190,icdmp%,&HF
```

Then replace:

```
result!=Request(my1req%,WINDOW(1))
```

with:

```
result!=SetDMRequest(WINDOW(1),my1req%)
```

and finally, just before the CLOSEW #1 statement, insert the following:

```
result!=ClearDMRequest(WINDOW(1))
```

THE AMIGA SHOPPER READER SURVEY

YOUR CHANCE TO HAVE YOUR SAY

We want to improve *Amiga Shopper* next year, so please help us decide what goes in future issues. If you can spare five minutes, just fill in this simple questionnaire, cut out the page and fold it up according to the instructions overleaf, then just put it in the post – no stamp required. We hope it'll be worth the effort when you see the improved magazine.

When filling in this questionnaire:
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0 How did you first hear of *Amiga Shopper*?
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c❑ Recommended by a friend
d❑ Picked up a copy 'on spec'

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c❑ Planned visit to newsagent
d❑ Subscription
e❑ Just saw it in the shop

2 How often do you read *Amiga Shopper*?
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b❑ Most issues d❑ This is my first issue

3 How many other people read your copy of *Amiga Shopper*?

....

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8 *Amiga World*	................./10
9 *CU Amiga*	................./10

For each of these sections in the magazine, would you like to see less, more or the same space devoted to it in future? (Bear in mind you can't have more of everything!)

	Less	Same	More
10 News	a❑	b❑	c❑
11 Letters	a❑	b❑	c❑
12 Amiga Answers	a❑	b❑	c❑
13 Video	a❑	b❑	c❑
14 Education	a❑	b❑	c❑
15 Graphics	a❑	b❑	c❑
16 AmigaDOS	a❑	b❑	c❑
17 DTP	a❑	b❑	c❑
18 AMOS	a❑	b❑	c❑
19 PD & shareware	a❑	b❑	c❑
20 Competitions	a❑	b❑	c❑

Which of these would you like to see in the magazine? (Never, sometimes, frequently or every month)

	Never	Som	Freq	EvMo
21 Single product reviews	a❑	b❑	c❑	d❑
22 Comparative product reviews	a❑	b❑	c❑	d❑
23 Graphics tutorials	a❑	b❑	c❑	d❑
24 Music tutorials	a❑	b❑	c❑	d❑
25 DTP tutorials	a❑	b❑	c❑	d❑
26 Beginners programming tutorials	a❑	b❑	c❑	d❑
27 Advanced programming tutorials	a❑	b❑	c❑	d❑
28 Tutorials based on particular programs	a❑	b❑	c❑	d❑
29 General interest features	a❑	b❑	c❑	d❑
30 Show reports	a❑	b❑	c❑	d❑
31 Foreign news reports	a❑	b❑	c❑	d❑
32 Comms coverage	a❑	b❑	c❑	d❑
33 Book reviews	a❑	b❑	c❑	d❑
34 CDTV & its software	a❑	b❑	c❑	d❑
35 New PC/Mac software for Amiga emulators	a❑	b❑	c❑	d❑
36 Cover-mount booklets	a❑	b❑	c❑	d❑
37 A cover disk (with the mag at £2.95)	a❑	b❑	c❑	d❑
38 Colour editorial pages	a❑	b❑	c❑	d❑
39 Better paper quality (with the mag at £1.95)	a❑	b❑	c❑	d❑

40 Which of the following are reasons why you buy *Amiga Shopper*? (You may tick more than one)
a❍ For the hardware reviews
b❍ For the software reviews
c❍ To find the best prices from advertisements
d❍ To learn about my computer and how to use it
e❍ For an interesting read
f❍ It's cheap
g❍ To buy through mail order advertisements
h❍ It's the only one with no games

41 What model of Amiga do you own?
a❍ A500 e❍ 2000
b❍ A500 Plus f❍ 3000 series
c❍ A1000 g❍ None
d❍ 1500

Do you own or intend to buy in the next six months any of the following hardware?

	Own (42)	Intend to buy (43)
Monitor	a❍	a❍
Printer	b❍	b❍
Sound sampler	c❍	c❍
Video digitiser	d❍	d❍
Genlock	e❍	e❍
Hard disk	f❍	f❍
Flicker fixer	g❍	g❍
Graphics enhancer	h❍	h❍
Emulator	i❍	i❍
Second disk drive	j❍	j❍
Modem	k❍	k❍
1Mb total RAM	l❍	l❍
Over 1Mb total RAM	m❍	m❍

Do you own or intend to buy in the next six months any of the following software?

	Own (44)	Intend to buy (45)
Word processor	a❍	a❍
Spreadsheet	b❍	b❍
Database	c❍	c❍
Painting program	d❍	d❍
Drawing program	e❍	e❍
DTP	f❍	f❍
Comms program	g❍	g❍
Sampler/sequencer	h❍	h❍

46 Roughly how much do you expect to spend on hardware in the next six months?
a❑ Nothing
b❑ £1- £99
c❑ £100-£199
e❑ £200-£500
f❑ More than £500

47 Roughly how much do you expect to spend on software in the next six months?
a❑ Nothing d❑ £200-£500
b❑ £1- £99 e❑ More than £500
c❑ £100-£199

48 What is your age?
a❑ Under 16 e❑ 35-44
b❑ 16-19 f❑ 45-54
c❑ 20-25 g❑ 55-65
d❑ 26-34 h❑ Over 65

49 What is your approximate annual income?
a❑ Student grant/at school
b❑ Other under £4,000
c❑ £4,001-£7,000
d❑ £7,001-£10,000
e❑ £10,001-£15,000
f❑ £15,001-£20,000
g❑ £20,001-£30,000
h❑ Over £30,000

50 Does your job largely involve working with computers?
1❑ Yes 0❑ No

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Cracking The Shell



"Synchronous or asynchronous – that is the question."
Mark Smiddy

Mark Smiddy helps you get to grips with multi-tasking at the AmigaDOS level.

So far this series has covered many aspects of AmigaDOS but avoided one of the most important – multi-tasking. There is a good reason for this: multi-tasking is an inherently difficult concept to grasp. There's all this talk about synchronous and asynchronous processes; process handles; background processes and so on. But the time has come to throw caution to the wind (OK, a light breeze will do) and pry into the depths of raw multi-tasking.

One of the biggest problems faced by beginners is the concept of multi-tasking, so let's consider an analogy for a moment. When you drive a car (non-drivers please observe closely next time you are in a car) you are multi-tasking. The job of driving involves many different tasks: some carried out independently; others together. In theory, a good driver carries out many tasks automatically, and consciously acts out others at predetermined times in a distinct order. To apply the jargon, these can be termed asynchronous processes, asynchronous background processes and synchronous foreground processes.

Consider the tabulated example of a driver on approach to a T junction intending to turn right. Synchronous processes must be executed in set order – one must be completed before another can start. Ergo, the driver must reduce speed before changing to a lower gear. Background processes happen constantly – checking the vehicle's speed. Asynchronous processes execute without waiting for the synchronous ones to complete; but they can be synchronised with each other. In this case the clutch must be disengaged fully before changing down.

Although this is a fairly simple analogy you can see a lot of things which are happening apparently all at once. Information in square brackets represent the results returned by the various processes such as speed in mph.

TASKS AND PROCESSES

Much the same sort of thing is happening inside the Amiga. Lots of little tasks are beavering away in the background and constantly chatting to each other. Even when the machine is apparently doing nothing, tasks are looking after the disk drives (one task for each drive), the keyboard, the Workbench and so on. AmigaDOS has no control over this; that job is taken care of by EXEC.

When you start a new Shell or CLI, AmigaDOS's first response is to echo "New Shell process XX" where XX is the Shell's process number.

In most versions of AmigaDOS, twenty slots are reserved for processes; which means you can have up to twenty AmigaDOS commands – or Shell launched program – running simultaneously. Listing 1 is a simple script which demonstrates this. Note that aside from available memory, there is no restriction on the number of Shell processes in AmigaDOS 2. Using the test program, a 9Mb A500 plus managed to launch 293 separate Shells before giving up! With a standard 1Mb machine, a more realistic limit is around thirty.

It is important to realise that processes and tasks are not one and the same. Returning to the motoring analogy, think of the driver as being the task and the car as the process. A task (driver) can operate without the process (car) but not the other way around. By extending the analogy, you can think of a program as being a passenger. The program (passenger) can only operate if the task (driver) is present driving the process (the car).

For most purposes you do not need to worry about how all of this works – it just does. At AmigaDOS level, you only need to concern yourself with processes. AmigaDOS provides a simple command to sho[w] you what's happening. Ensure you only have one Shell window open a[nd] enter this:

```
1>STATUS
Process 1: loaded as command
STATUS
1>
```

AmigaDOS tells you one Shell process is currently executing the STATUS command. AmigaDOS 2 users will have seen something like this:

```
1>STATUS
Process 1: loaded as command
```

continued on page

SMIDDY'S RED HOT TIP

To get the best from this month's examples, use ED to add the following line to the end of your boot disk's "S:Shell-startup" file:

```
PROMPT %N>
```

Or, ensure you enter the command in every new shell like this:

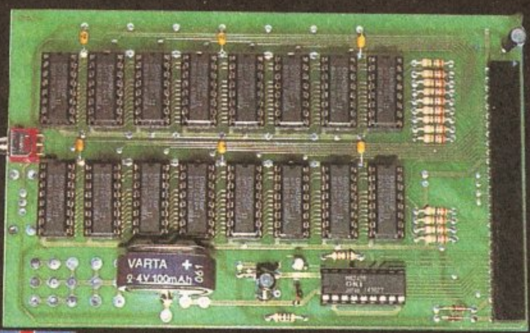
```
1.SYS>PROMPT %N>
1>
```

Notice how the prompt changes to reflect the one shown in the examples. Inserting "%N" as part of your prompt string, forces AmigaDOS to insert the number of the current process. Similarly, using "%S" displays the current position in the directory tree as set by CD.

	Synchronous Processes	Background	Asynchronous process
1	Check mirror	Check speed (30)	Keep accelerator constant
2	Car following	Check speed (30)	Right turn signal on
3	Reduce speed	Check speed (28)	Ease off accelerator
4	Check mirror	Check speed (24)	Accelerator at new level
5	Move to right side of lane	Check speed (21)	Turn wheel right Check course change Turn wheel left
6	Reduce speed	Check speed (15)	Remove foot from accelerator Start gentle braking
7	Check mirror	Check speed (7) (stall speed)	Partly disengage clutch Stall speed – stop braking
8	Correct gear	Check speed (5)	Fully disengage clutch Change to 2nd gear
9	Emerge from junction	Check speed (7)	Check for traffic (none) Gently engage clutch Depress accelerator Turn steering wheel

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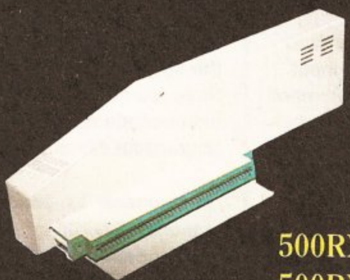
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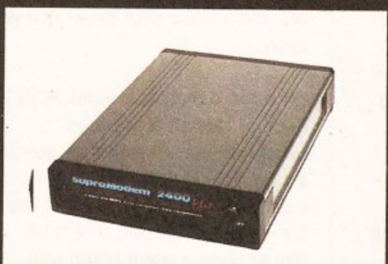
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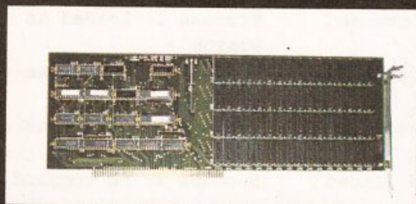
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continued from page 90

```
STATUS
Process 2: loaded as command
conclip
Process 3: loaded as command
Workbench
```

SLOTTING INTO PLACE

The process numbers are not important at this stage. On AmigaDOS 2 machines, the two extra processes are handling the console clipboard (cut and paste feature) and the new Workbench. Just ignore them.

The important thing to note here is that Process 1 is showing itself running STATUS, even though the command has completed and returned control to the keyboard. This is because STATUS, like many commands, can only work on an instant "snapshot" of the machine's status taken when it executes. As you will see shortly, this effect is even more apparent in AmigaDOS 2.

The next step is to open another Shell process and see how this affects the machine. You can open a Shell with NEWSHELL or by double-clicking the Shell's icon, but to understand these examples better, make sure you activate and work in the initial Shell. Enter this:

```
(AmigaDOS 1.3)

1>STATUS
Process 1: loaded as command
STATUS
Process 2: no command loaded

(AmigaDOS 2)

1>STATUS
Process 1: loaded as command
STATUS
Process 2: loaded as command
conclip
Process 3: loaded as command
Workbench
Process 4: no command loaded
```

As you can see, the new process has appeared in the process list and has been allocated the first available slot. In the AmigaDOS 2 scenario, process slots 2 and 3 were already occupied, so the next free slot, number 4, is allocated. We can also look at this another way round by closing the first Shell, checking the process status and starting a new shell again like this. The prompt number "n>" will show you which Shell to type in:

```
(AmigaDOS 1.3)

1>ENDCLI
CLI process 1 ending
2>STATUS
Process 2: loaded as command
STATUS
2>NEWSHELL
2>STATUS
Process 1: no command loaded
Process 2: loaded as command
STATUS

(AmigaDOS 2)

1>ENDCLI
Process 1 ending
4>STATUS
Process 2: loaded as command
conclip
Process 3: loaded as command
Workbench
Process 4: loaded as command
STATUS
4>NEWSHELL
1>STATUS
Process 1: loaded as command
STATUS
Process 2: loaded as command
conclip
Process 3: loaded as command
Workbench
Process 4: no command loaded
```

In the first part of these examples, Shell process 1 is shut down with ENDCLI and its slot becomes free. This is displayed at step 2 with STATUS. When the new Shell is started (NEWSHELL) it is automatically allocated the first free slot (number 1) and this is shown with STATUS again at step 4.

DO RUN, RUN...

These examples show multi-processing as it applies to multiple shells, each one running its own commands. Although this is true multi-tasking (and quite a valid method), it is inconvenient to open a new Shell every time you want to run 2 commands. Some commands will only work if they are run in their own Shell! Because of this, AmigaDOS provides a command to do this for you: RUN. Try the following:

```
1>NOFASTMEM
```

As you can see, the Shell seems to hang up, refusing to take any input from you. You can stop the command (which switches off fast memory) by sending it a control-C break code. In other words, hold down CTRL and tap "C".

Now let's try that again using RUN:

```
1>RUN NOFASTMEM
[CLI 2]
```

This time you retain control of the Shell as NOFASTMEM is popped into process slot 2. That's what the "[CLI 2]" message means. We can see this by checking with STATUS, viz:

```
1>STATUS
Process 1: loaded as command
STATUS
Process 2: loaded as command
NOFASTMEM
```

By executing the same command again (shame on those who jumped the gun) something interesting happens. Just watch closely:

```
1>RUN NOFASTMEM
[CLI 3]
1>STATUS
Process 1: loaded as command
STATUS
```

As you might expect, when run for a second time NOFASTMEM is allocated the next free slot – 3 in this example. But by the time STATUS is executed instead of three processes, only one is shown. It's enough to make your brain itch.

Now let's look at what happened in slow motion:

RUN NOFASTMEM: Started the **NOFASTMEM** command and allocated it to process slot 2.

STATUS: Checked the process list and reported that two commands where running: **STATUS** and **NOFASTMEM.**

RUN NOFASTMEM: Here it gets tricky. This Started another copy of the **NOFASTMEM** command and automatically allocated it the next free slot in the process list.

Meanwhile, **NOFASTMEM** discovered another copy was already running. When this happened, it sent a message to the first (running in slot 2) to close down and go away. On receiving a message to confirm the first one had closed (freeing slot 2) it closed down itself and freed slot 3. This happens in the blinking of an eye.

STATUS: If you had been able to get the status snapshot at the right time, you might have seen the intermediate result as the first **NOFASTMEM** closed:

```
   Process 1: loaded as
command STATUS
   Process 3: loaded as
command NOFASTMEM
```

In practical terms this isn't possible, so you get the final result where both programs have shut down and gone away.

On a more technical level, RUN is used to launch processes asychronously. It works by starting a new Shell process internally, but retains the current Shell window for input and output. (It's a bit like sharing a wash basin with several different people.) Unlike NEWSHELL, the internal Shell only remains until the RUN-launched command terminates. Some commands, such as MORE, recognise this and behave differently. Here's what happens when you RUN-launch STATUS in the different versions.

```
(AmigaDOS 1.3)

1>RUN STATUS
Process 1: no command loaded
Process 2: loaded as command
STATUS

(AmigaDOS 2)
```

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LISTINGS • LISTINGS • LISTINGS

Listing 1 – PROCESS TEXT

```
Lab start
NewShell
Skip Start Back
```

Listing 2 – CHATTER

```
1. .key NAME1/A,NAME2/A
2. Echo >T:qwe<$$> "Chat system opened as: Host=<NAME1>
Remote=<NAME2>"
3. More T:qwe<$$>
4. Run Execute S:Chatty <NAME2>
5. Lab Start
6. Copy Pipe:<NAME1> T:msg<$$>
7. More T:Msg<$$>
8. Skip Start Back
```

Listing 3 – CHATTY

```
1. .key NAME
2. Lab start
3. Type pipe:<NAME>
4. Skip start back
```

continued from page 92

```
1>RUN STATUS
Process 1: loaded as command
RUN
Process 2: loaded as command
conclip
Process 3: loaded as command
Workbench
Process 4: loaded as command
STATUS
```

As you can see, the two are not consistent. This is just an effect of the version of AmigaDOS – not a bug; a feature. In AmigaDOS 1.3 RUN is not added to the process list in the same way so it never actually appears under STATUS. In AmigaDOS 2, RUN is temporarily loaded into the process and that's how STATUS sees it. A few milliseconds later, RUN will complete and exit freeing process slot on (your Shell) for new commands.

There was a lot to take in there – but there's more to come. Next month (to herald the arrival of AmigaDOS 2) is a special on some of the new commands and features. Until then, I can be contacted at the usual address.

HOW THOSE CHAT SCRIPTS WORK...

Last month I introduced some new script programs which give users on 2 machines the chance to chat to each other in real time. One unfortunately lost part of a line during translation, the correct version is listed here. Although executed from the remote terminal, these scripts handle all the communication between the 2 machines. Here's how they work:

Program: CHATTER
Purpose: Start CHATTY; handle messages on host machine

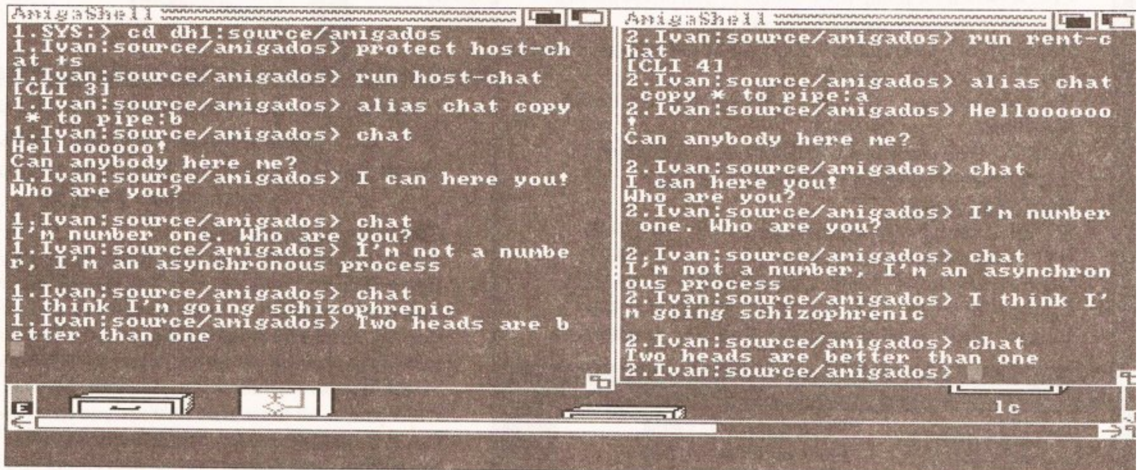
1 This defines the script's argument template. Two inputs are required from the user the name of the host and remote machines. Since the /A template option has been used, both arguments must be supplied or the script will fail to run.

2 Creates a file in the temporary files assignment T: containing the startup message which will be displayed on the host terminal. The arguments surrounded with angle brackets will be replaced by the users input. Therefore if the command line was:

```
1>RUN CHATTER DAVE PAT
```

the file will contain the message: Chat system opened as: Host=DAVE Remote=PAT. The filename is determined adding the process number to "QWE". Therefore if CHATTER was running as process 3, the filename would be "QWE3".

3 This is a trick which relies on the ability of MORE to recognise when it has been RUN-launched. Normally, MORE would display T:QWE on the remote terminal, however since EXECUTE has to be RUN-launched, the script is also running as a process and any commands it contains are



The AmigaDOS chat scripts in action – of course if you are lucky enough to own more than one Amiga then we could do more than just chat from one side of the screen to the other.

also running asychronously. The end result is that MORE pops up as a window on the HOST machine (much to the surprise of unwary operators).

4 Not a lot of people know this, but it is quite legal to RUN-launch scripts from within scripts – even those which have been launched with RUN in the first place. That's what happens here, CHATTY is RUN-launched from CHATTER. It must be started in this way because, as you will see later, it never returns. CHATTY is passed to one parameter, the name of the remote terminal. (The parameter was missing in the original listing.)

5 This label defines the start of an loop which is called endlessly. Like CHATTER, this script never finishes.

6 Copies the contents of the host pipe (if any) to a temporary file. This forces the script to pause until some data appears at the pipe and prevents the script from needlessly looping.

7 Immediately displays the contents of the temporary file. If more was used like this to display the contents of the pipe directly the script would not pause correctly.

8 Forces the script to jump back to the label defined at 5 completing the endless loop. The result is the program waits until a message appears on the pipe, displays it, and waits for the next one.

Program: CHATTER
Purpose: Handle messages on remote machine

This script is never executed directly, it works as a support script which is called by CHATTY. Typically, scripts of this size can be created by the script which calls them, but I'll leave that heady topic for another time.

1 Defines the argument template for the script. Although the argument would normally be required, it is not necessary to do that here since the correct syntax is assured by the calling script. The argument received by CHATTER is the name allocated to the remote terminal.

2 Defines a label which will be jumped to when the script loops.

3 Waits for data to be sent to the pipe on the remote terminal and prints it. Like COPY, TYPE waits for information to appear on the pipe before doing anything.

4 Loops the script back to Step 1, causing it to execute again. This script never stops, but because it's attached to an internal Shell (via RUN) it does not affect the machine's operation.

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JARGON BUSTING • JARGON BUSTING

Background – A process is said to be running in the background when it does not hold a lock on the input and/or output handles of the Shell that launched it.

EXEC – The multi-tasking executive. The part of Kickstart which looks after everything from memory allocation to task scheduling.

Handle – An address or port used by AmigaDOS programs to get information from and to send results to. Handles are like PO boxes. If you reply to a personal advert, you usually write to a PO box; similarly, if you placed the ad you would collect the mail from a PO box. Most AmigaDOS programs have 2 handles - one for input and one for output. However, some have a third handle which they send errors to - this handle always points to the Shell window.

Launch – To start a program or application - usually only applied to the Shell, but just as valid when applied to Workbench.

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I can C clearly now

C: probably the best programming language in the world? Cliff Ramshaw investigates.

Nine out of ten coders say they prefer it. Why do so many programmers, especially Amiga programmers, vociferously support C? Why was most of the Amiga's operating system written in C?

C is a high-level language, in that programs can be written in it with sophisticated looping constructs, and data types and so on. However, unlike other high-level languages such as Pascal or Prolog, it enables the programmer to access the machine at an extremely low level, giving the freedom normally only available to the assembly language programmer. The flexibility of C has won it many supporters.

C is now one of the programmer's primary choices for developing operating systems. It's a compiled language, meaning that the programmer's code is translated wholesale into machine language to achieve the optimum running speed. Furthermore C's facilities for low-level machine access are perfect for operating system development. Although some hardened assembly language programmers disagree, the high-level constructs are essential for writing bigger programs.

With its healthy systems programming pedigree, C was the obvious choice for writing the Amiga's operating system (or OS, as hardened hackers call it). The OS is written in a very modular way, with many routines for the applications programmer. These exchange data with external programs in the C's own way. For this reason, C is the easiest language to use on the Amiga if any sort of interaction with the OS is required. It's possible with other languages, just more difficult. This also explains why nearly all of the official Amiga documentation uses examples written in C.

The language itself is small. Unlike many of the Basics available for the Amiga, C has few keywords. Instead, it makes extensive use of non-alphanumeric characters (*, ^, ? and so on) to provide subtleties of meaning. Consequently, although C is easy to learn, it can be difficult to master. The situation is exacerbated by C's possible abbreviations and its use of white space. White space (consisting of tabs, spaces and carriage returns) is insignificant to a C program: a program can be tabulated as its author sees fit, meaning that some programs can be difficult to decipher.

The principles of C are not too different from other high-level languages such as Pascal and Modula 2. Programs are made up of procedures or functions, declared by giving the procedure's name followed by brackets and any parameters that the procedure accepts. The body of the procedure then follows, enclosed in curly braces. The classic C example is the 'hello world' program, which prints 'hello world' on the screen. The code looks like this:

```
#include <stdio.h>
main()
{
printf("hello world\n");
}
```

All C programs have a procedure called 'main'. This is the controlling procedure, executed at the start. The line beginning '#include' is not C, but an instruction to something known as the C pre-processor. This is a program which deals with the code before the compiler does. An 'include' statement tells the pre-processor to add a pre-written segment of library code to the beginning of the user's program. The file in this case, stdio, is a standard input/output module providing basic screen and keyboard facilities.

The body of the program is taken up by the 'printf' line. This is not a C statement, but rather a call to a procedure in the stdio library. Printf sends formatted output to the screen. The '\n' at the end of printf's parameter is a control character representing a çarriage return.

The difference between a function and procedure in C is whether it returns a value to the procedure/function that called it. This is done with the 'return' statement, followed by the value it is to return enclosed in brackets. A further refinement is given by including the type (integer, floating point, character, and so on) of value that it returns before the function's name. Procedures return no value, so they have type 'void'. The 'main' procedure (above) can be re-written:

```
...
void main()
...
```

Every variable must also have a type, and it must be declared before appearing in the code. A program to add 2 integers is shown below:

```
#include <stdio.h>
void main()
{
int a,b,c
a=4;
b=6;
c=a+b;
printf("The answer is ↵
%d\n",c);
}
```

Variables are defined by using the keyword for their type followed by the variables' names. Assignment to variables requires the equals sign. In this case the 'printf' call is a little more complex. It has 2 parameters: a string and an integer. The '%d' in the string tells printf that the next parameter is an integer. Printf is a rather clever function,: it can take a variable number of parameters.

> **BLITS**
>
> *The language, C, was designed back in the early seventies, in the Bell AT&T laboratories, and found its first real application in writing the now widespread Unix operating system. It's been first choice as a systems design language ever since.*
>
> **& BOBS**

A related function is called 'scanf'. This takes user input, and can include formatting information in a manner similar to printf. The program to add 2 numbers together would be much more useful (but not marvelous) if the user could enter the 2 numbers first as follows:

```
#include <stdio.h>
void main()
{
int a,b,c;
scanf("%d %d",&a,&b);
c=a+b;
printf("The answer is ↵
%d\n",c);
}
```

The first parameter of scanf is a format string. The '%d' means an integer is required from the user – in this case the program wants 2. The following 2 parameters are the variables in which the input is stored.



"C's great. I wouldn't give an X for anything else."
Cliff Ramshaw

In C, variables passed to functions as parameters are passed by value. This means that the called function gets the values held in the variables which were the parameters of the call, and that it operates on these values; but these operations have no effect whatsoever on the variables themselves external to the called function. This means that simply passing variables to scanf won't work, because scanf can't alter these variables, hence no means of returning the user's input.

This is avoided by the use of pointers. A variable holds a value. Whenever a variable name appears, that variable's value is the thing of interest. But, each variable is held somewhere in the computer's memory, an address, which is quite distinct from the value itself. In C, a pointer is a variable whose value is an address in memory, usually the address of another variable. So, in cases like that above, instead of passing a variable to a function, a pointer to the variable's address is passed. This pointer cannot be modified by the called function; but by using it the function can modify the contents of the address in memory where the original variable is held. In other words, the function can modify the original variable's value.

If there is a variable called 'a', then its address in memory is given by preceding the name with an ampersand character: '&a'. It is the addresses of a and b that are passed to scanf, which then modifies the values of a and b according to the user's input.

The above example can be made more explicit using variables to hold a and b's addresses:

continued on page 102

continued from page 101

```
#include <stdio.h>
void main()
{
int a,b,c;
int
*pointer_to_a,*pointer_to_b;
pointer_to_a=&a;
pointer_to_b=&b;
scanf("%d %d",pointer_to_a, ↵
pointer_to _b);
c=a+b;
printf("The answer is ↵
%d\n",c);
```

The asterisk in the variable declarations tells the compiler that the variables are not integers, but pointers to integers. A pointer to a floating point number would be:

```
float *pointer_to_a_float;
```

Several other variable types are also available, including integers and floats with varying precisions. A character variable (denoted as 'char') can hold a single alpha-numeric character. Arrays are also supported, so character string can be constructed as an array of chars. The string "hello world" in the first example is effectively an array of char, although it is defined as a constant value rather than a variable. Whenever a function is called with an array as a parameter, what is passed is a pointer to the array rather than its value. This is analogous to the passing of the pointer to the variable 'a' in the scanf example, but with arrays the name need not be prefixed by the ampersand symbol.

Although C is a typed language – variables have to be declared as being of a certain type – it's easy in C to convert from one type to another. The most common case is conversion between a char and a short integer (one which is stored in a single byte). Assigning a char value to a short integer gives the integer variable the character's ASCII value. Unlike more strict languages, type mismatch assignments are allowed in C: the binary image of 1 variable is simply copied into the other. It's important to know the internal representation of the different types if you want to make use of this.

Type conversion can be more explicit by 'casting'. Assigning a floating point to an integer would be done by:

```
int a;
float b;
a=(int *)b;
```

which would assign the integer part of b to a, and it does save worrying about internal storage formats.

No procedural language would be complete without facilities to control the flow of program execution. The 'goto' statement, beloved of Basic programmers, is supported, but not recommended – C is, after all, a structured language. Another Basic favourite is the FOR...NEXT iterative loop. The C equivalent has a different syntax, and is more powerful:

```
for (i=1;i<=10;i++)
{
/* body of loop */
}
```

The 3 parts of the loop are separated by semi colons. The first is an assignment, setting i to 1. The second is a conditional – the loop will be executed when it is true. The third part is an action. The 'plus plus' operator is a shorthand way of writing 'i=i+1'. This particular loop counts from 1 to 10. Everything held within the curly braces following the 'for' statement is executed until the loop terminates (when i=11). The bit inside the curly brackets here is a comment, beginning with '/*' and ending with '*/'. Comments are ignored by the compiler.

The 'while' construct can be used to execute a loop so long as a condition immediately following the while statement is true. For example:

```
while (i==1)
{
   printf("i is equal to 1");
   i++;
}
```

Note that testing for equality (as opposed to assignment) uses 2 equals signs together. A single equals sign would set i to 1, and return a result of true. The loop would then be infinite.

The 'while' statement can also be used at the end of the loop:

```
do
{
   printf("i is equal to 1");
   i++;
}
while (i==1);
```

In this case the body of the loop is always executed at least once, even if i is not equal to 1.

The form of conditional control which is most used in the language of C is supplied by the 'if' statement. The syntax is as follows:

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```
if (i==1)
{
   printf("i is equal to 1")
}
else
{
   printf("i is not equal to
1");
}
```

The 'else' part is optional. As with the conditional-based loops, more than one C statement can be included inside the curly braces.

A further construct, familiar to Pascal programmers, is the 'switch' statement, to test a variable agains a range of values, and following one of several courses of action as appropriate:

```
switch (i) {
case 1: printf("i = 1");
   j=2;
   break;
case 2: printf("i = 2");
   j=1;
   break;
default: printf("i = ↵
something else");
   j=0;
   break;
}
```

The variable is placed in brackets after the 'switch' statement. It must be an integer. A different 'case' statement with corresponding value is given for each possibility of interest. The 'default' keyword captures any values unaccounted fo After the necessary actions have been performed, the 'break' statement causes control to continu after the 'switch' statement, at the statement following the closing curly brace. Incidentally, 'break' can be used to leave any C structure, such as a loop, enclosed in curly braces.

There are many other subtleties to C, sadly beyond the scope of this article. Many abbreviations are possible, and it's easy to write statements to perform several functions: things that make C programming such a joy, but which make the resulting code somewhat impenetrable. It's true to say that many C programmers take a pride ir their code being unreadable. AS

C on the Amiga

The most popular C development package is SAS C, available in the UK from HiSoft. Many of the Amiga programs commercially available are developed with this system.

The latest version, 5.10, comes in 4 disks, including the compiler itself, a linker, a full-screen editor, a set of library files and the Commodore include files (essential for programs that cooperate with the Amiga's operating system), a number of Unix-like utilities, and a debugger, along with 2 healthy-sized manuals. These manuals are extensive, but they won't teach you C, and it can be difficult to find the piece of information you're after, despite the indices.

LSE, the editor that comes with SAS C, is a full-screen, Intuition-based affair. It is powerful and easy to use. Although it doesn't provide an integrated environment, it does have many features for speeding up development. This is notoriously laborious for compiled languages (as opposed to interpreted ones such as Basic, which can be tested as soon as a modification is made to the code). Normally, it's necessary to load an editor, write your program, save it and exit the editor, compile the program, link it, run it, watch it crash, load the editor...

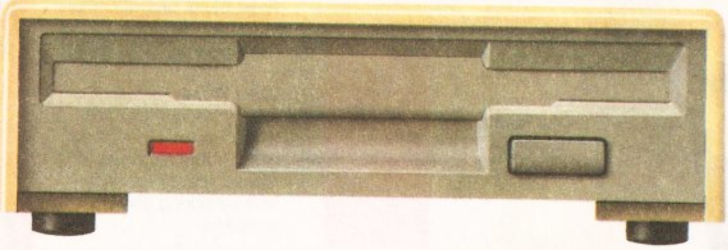
To help cut down this tedious development cycle, LSE enables the programmer to compile the current program while working on it. Any errors are reported immediately, and the editor will highlight one after another so that they can be corrected. However, the correction of syntax is a small part of error detection. Once the program has compiled, it's still necessary to leave the editor before using the linker and testing the program.

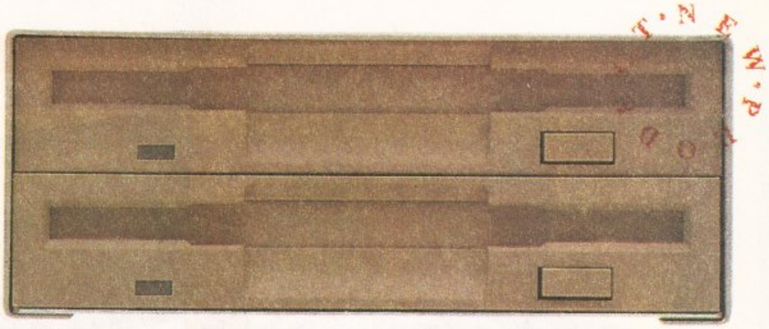
The linker can only be invoked from the CLI/Shell; there is no Workbench support. Its command line is typically more than eighty characters long, and a knowledge of the required libraries is important to use it. Then again, learning about a few libraries is a small task compared to learning and using C itself.

For bugs in your program which won't wash out, there's a magic ingredient: a source-level debugger. Using this, it's possible to set break points throughout the code in question and watch as it executes.

All in all, SAS C provides an excellent development environment for the Amiga. If it can be written, it can be written in SAS C. The only exceptions are those really fast routines that *must* be coded in assembler. Even then, the package includes a full assembler, along with provision for mixing assembler and C source. The libraries which come with the package deal with the Amiga's peculiarities and provide standard ANSI and Unix routines, so code can be easily ported from other machines.

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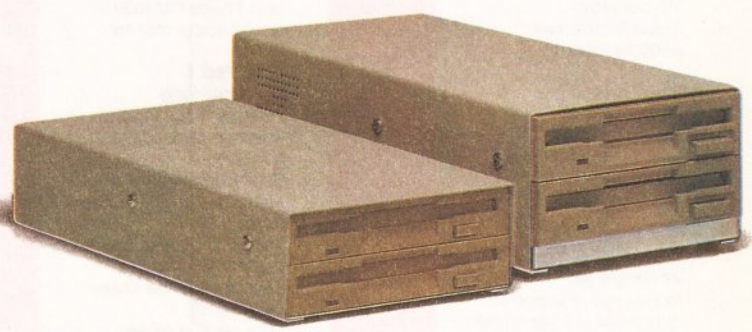
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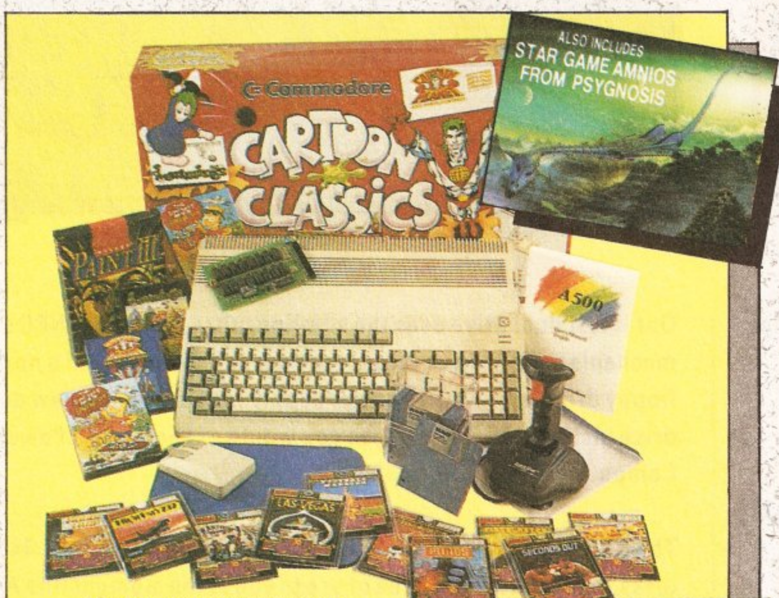
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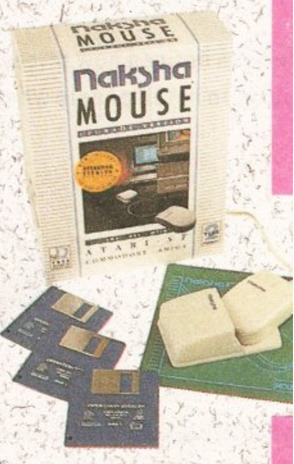
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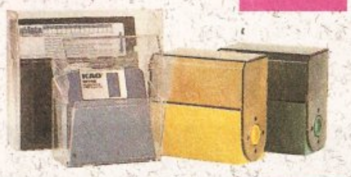
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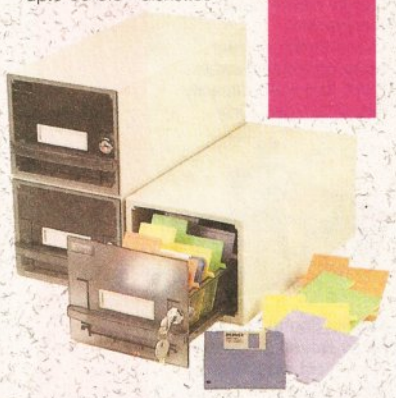
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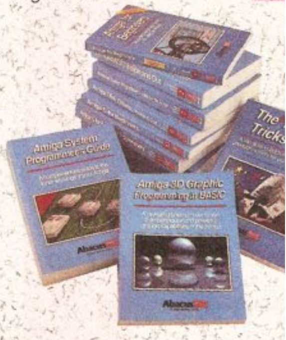
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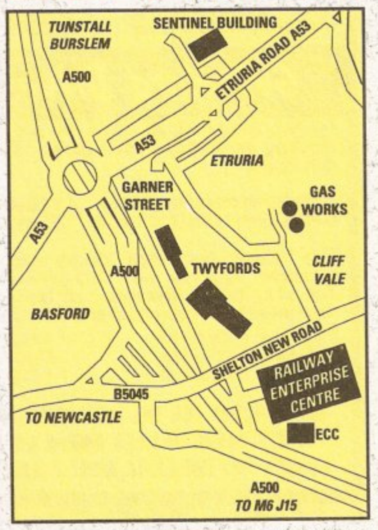
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AMOS action

This month Phil South looks into using variables and procedures and tops it off with some exotic copper routines.

L ast month I told you a little bit about using the copper, but now (fanfare) in our new, wildly expanded AMOS olumn, I'll be looking at ways you an use the copper to good effect articularly in the case of displaying opper bars behind text. But more of at in a sec.

I'll also be going back in time to ok at the basics of how procedures nd variables work, which is at the ore of very carefully structured ogramming. A tidy structured ogram with good use of variables, nd all that, is a very clean and fficient program. Now that this olumn has expanded, I'll be going to a lot more detail on how you ctually go about writing a program in MOS, step by step, passing on all e little tricks and tips I've learned ong the way.

So enough of this babble, on ith the show.

DON'T FORGET

he AMOS conference on CIX, hich has bundles of programs d lots of hints and tips for all AMOS users. Join CIX by dialling their voice line and asking for details on 081-390 8446, or just log on to 081-390 1244 and have your credit card ready.

VHAT'S UP PROC?

rocedures are at the very heart of hat makes AMOS so powerful as a evelopment programming language. fact, all good structured Basics ave a Procedure system, and AMOS not an exception. But if you've ome from a lesser Basic to AMOS, ou might not really know what you're hissing if you don't use them.

Using Procs is easy. First you efine your Proc, and this can be one anywhere in the program, using he:

```
rocedure <name>
```

ommand. After the Proc is defined, can be called. You do this either vith:

```
roc <name>
```

r just the name of the Proc. This neans that the new Proc is almost ke a new AMOS command that ou've written yourself, and you can se the Proc any time you like in the rogram, just like any other AMOS ommand.

Take this short demo program:

```
ROC PROG by Phil
'
Proc PHIL
'
Procedure PHIL
   Print "It's a Phil South ↵
program!"
End Proc
```

The procedure in this case is a simple routine to print the "It's a Phil South program!" string in the Print command. Every time you use Proc PHIL in the program, you get the same result as if you'd typed the Print line inside the Proc. Most of the time you'll use the name of the Proc without typing the Proc part of the call, like so:

```
PROC PROG by Phil
'
PHIL
'
Procedure PHIL
   Print "It's a Phil South ↵
program"
End Proc
```

Of course the routine inside the Proc definition can be more complex than just a simple Print command, and in fact this is usually the case. You have a Proc for each facet of the program and then call it from a main loop in the program. For example you could have a program like so:

```
MAIN:

CHECK_COLLISION
MOVIT
SHOT
'
Goto MAIN
'
Procedure CHECK_COLLISION
Procedure MOVIT
Procedure SHOT
```

which would be a simple game program. As long as the Proc defs are in the program somewhere, the Procs will operate, they don't have to be in the actual flow of the program.

Looking at the Procs above you may think I've forgotten to include anything inside the Proc defs. But this is not the case, the Procs have been 'folded'.

The real beauty of Procs is you can fold them up into one single line to make your listings more readable. Folding is done using the Fold/ Unfold command in the AMOS command menu. When you activate this command it toggles the folding on and off for the procedure at the point you've inserted your cursor.

Toggling means you press it once and it folds the Proc, press again and it unfolds it. When you've folded the Proc, there is only a single line left, this is how our simple example would look:

```
'PROC PROG by Phil
'
PHIL
'
Procedure PHIL
```

It works just the same as it did before, but the trick is that you just don't have to look at all the annoying details.

Even better, there is a special Proc locking program called Lock.AMOS, which locks the Procs in your program. This prevents anyone else from unfolding your Procs and examining the code. Nice if you spend a lot of time coming up with neat coded Procs which you use in all your own programs.

Once you've folded a Proc you can save it off as a separate program, like so:

```
SCREENSAVEPROC.AMOS
```

for a Proc called ScreenSave, for instance. You don't have to call your saved Procs the same filename as the Proc, but it would help to identify them when they are on the disk. So your routines for all the day-to-day business in your programs like opening screens, loading .abk files and all that other mundane stuff, are all saved to disk as folded and locked Procs. All you do to build a program from these disconnected modules is to Merge them with the current program.

So every time you write a program, you start off by creating a different module for each stage of the program, and then just bolting them together. It's a nice way to work as the job is neatly broken down into manageable bits, and you may also have some very nice routines you can re-use, just by re-loading them!



"Welcome to the AMOS column, where every month you can find tutorials and lots of hints and tips for use with Mandarin Software's AMOS BASIC interpreter."

Phil South

VARI FUNNY

We've been over variable types before, but some types of variable come into their own when you start using Procs. The main things you will encounter are local and global variables. The main difference is that a local variable (which, by default, variables in Procs are) is independent of the rest of the program, and only comes into force when the program is running inside the Proc itself. So inside the Proc, A might be equal to 10, but outside the Proc it equals nothing, nada, zilch. Plain zero.

A global variable can be set however, and this means that the variable is equal to whatever it is set to throughout the program, inside a Proc and outside.

So a local variable is the default for variables in AMOS, where a variable inside a Proc is independent from the rest of the program. Like this example:

```
X=20 : Y=50
```

continued on page 110

HINTS AND TIPS • HINTS AND TIPS • HINTS AND TIPS

• Every month I will be printing AMOS hints and programs from my own sources and from you the readers. If you have any hints and tips (preferably accompanied by mini listings) save them on a disk and send them to: Phil South, AMOS Column, Amiga Shopper, 30 Monmouth Street, Bath, Avon, BA1 2BW. Or you can e-mail me on:

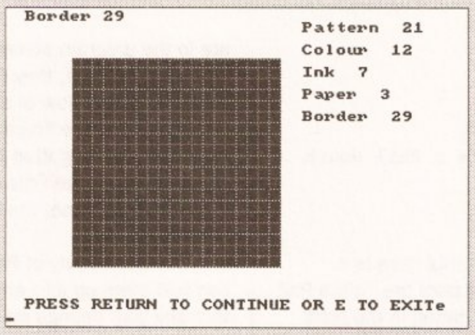
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• If you're directing your own science fiction movie some special effects are easy to do. This one does a fair impression of a radar screen, with the green scan line rotating around the screen. The program keeps going until you press a mouse key. Can you alter the program to give you an occasional green trace which fades after being revealed by the scan line?

```
Degree
Screen Open 0,320,256,2,Lowres : Curs
Off : Colour 1,$F0 : Colour 0,0 : ↵
Ink 1 : Cls 0
Double Buffer : Autoback 0
D=180
S=3
Repeat
   For ANGLE=359 To 0 Step -S
      XP=D*Sin(ANGLE)
      YP=D*Cos(ANGLE)
      Cls
      Draw 160,128 To 160+XP,128+YP
      Screen Swap : Wait Vbl
   Next
Until Mouse Key
```

• Some of the handy built-in patterns in AMOS can enhance your programs if used properly. This program helps you to try out the pattern types, and display them in different colour combinations. You are prompted at all stages of the operation, so no further explanation is necessary. Can you alter the program to display a pattern and let you try out different colours more interactively than this?

```
Screen Open 2,350,350,32,Lowres
Colour 0,$0 : Colour 1,$FFF : ↵
Colour 2,$F
Pen 0 : Paper 1
Curs Off : Flash Off
ST:
Cls 1
Locate 2,2 : Print Space$(30)
Locate 2,2 : Input "Select Pattern 0 ↵
to 34 ";P$
P=Val(P$)
Locate 27,3 : Print "Pattern ";P
Locate 2,2 : Print Space$(30)
Locate 2,2 : Input "Enter colour 0 ↵
to 31 ";C$
C=Val(C$)
Locate 27,5 : Print "Colour ";C
Ink C : Box 50,50 To 200,200
Locate 2,2 : Print Space$(30)
Locate 2,2 : Input "Ink ";I$
I=Val(I$)
Locate 27,7 : Print "Ink ";I
Locate 2,2 : Print Space$(30)
Locate 2,2 : Input "Paper ";O$
O=Val(O$)
Locate 27,9 : Print "Paper ";O
Locate 2,2 : Print Space$(30)
Locate 2,2 : Input "Border ";B$
B=Val(B$)
Locate 27,11 : Print "Border ";B
Ink I,O,B
Set Pattern P : Set Paint 1
Bar 50,50 To 200,200
Locate 2,28 : Input "PRESS RETURN ↵
TO CONTINUE OR E TO EXIT";A$
If A$="E" Then Cls 0 : Edit
If A$="e" Then Cls 0 : Edit
Goto ST
```



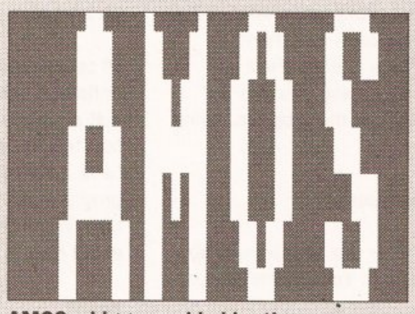
Handy for previewing pattern and colour coordinations.

• A simple but effective colour selector program which appears on the current screen after saving its background colour. It waits for the user to select a colour and returns the colour's number as a param. Written by Gary Fearn.

```
Flash Off : Curs Off
'
' INPUTS: X,Y coordinates and the ↵
size of the selector
'
RGBWINDOW[120,20,12]
_COL=Param
Print " You have selected colour ";
Pen _COL
Print _COL
Wait Key
Edit
'
Procedure RGBWINDOW[X,Y,SIZE]
'** This Proc returns the selcted ↵
colour as a param number  **
'
   NCOLS=Screen Colour
Get Cblock 1,X-10,Y-↵
10,X+(SIZE*2)+10,Y+(SIZE*NCOLS/2)+10
   Bar X-8,Y-8 To ↵
X+(SIZE*2)+8,Y+(SIZE*NCOLS/2)+8
   Reserve Zone NCOLS+1
   For B=0 To NCOLS/2 Step NCOLS/2
      For A=0 To(NCOLS/2)-1
         Ink A+B : Bar X,Y To ↵
         X+SIZE,Y+SIZE
         Set Zone A+B+1,X,Y To ↵
         X+SIZE,Y+SIZE
         Add Y,SIZE
      Next A
      Add X,SIZE
      Add Y,-(SIZE*(NCOLS/2))
   Next B
AGAIN:
   While M=0
      X=Mouse Zone
      M=Mouse Key
   Wend
   If X=0 Then Goto AGAIN
   Put Cblock 1
   Reset Zone
   RGB=X-1 : Rem RGB = selected colour
End Proc[RGB]
```

• Finally *Big Text*, a large text printing program, which will print up a big scrolling text message across the screen from the text in LET$. There are ways to make this program smoother, and alter the way it prints its text. Can you alter the program for more impressive big text.

```
LET$=" Let's hear it for AMOS!!!  "
LET$=LET$+".  It's a brilliant ↵
programming language, and now with ↵
AMOS 3D and the Compiler..."
LET$=LET$+"  AMOS is the best in ↵
the WORLD!!! That's all.....       "
LETOFF=0
Screen Open 1,416,256,4,Lowres
Def Scroll 1,0,0 To 416,256,-58,0
'Curs Off : Flash Off
Do
_SCROLLIT
If Mouse Key=1 Then Exit
Loop
Edit
'
Procedure _SCROLLIT
   Shared LET$,LETOFF
   If LETOFF=Len(LET$) Then LETOFF=0
   Screen 0 : Locate 0,0 : Print ↵
Mid$(LET$,LETOFF+1,1)
   Zoom 0,0,0,8,8 To 1,352,0,400,256
   Screen 1
   Scroll 1
   Inc LETOFF
End Proc
```



AMOS – bigger and bolder than ever.

continued from page 109

```
TRYIT
Print X,Y
Procedure TRYIT
Print X,Y
End Proc
```

Variables used inside the Procs are different those outside the Proc. You should also note that you can't carry over any variables into a Proc unless you make them global. So if you were to define arrays with DIM, you must watch out if you're going to use them in a Proc, especially if that Proc has been imported another program. Make a habit of defining such things as global variables if you think you may need to use them in Procs later. If you want to make a list of variables global, then you would use the Global keyword to define the list. Like so:

```
X=20 : Y=50
Global X,Y
TRYIT
Print X,Y
Procedure TRYIT
Print X,Y
End Proc
```

Global variables can be accessed from anywhere inside the program, even inside Procs.

If you want to access a list of variables global from inside a Proc, you must define them as "Shared". Like so:

```
X=20 : Y=50
TRYIT
Print X,Y
```

continued on page 112

Using AMAL Part 3

Last month we looked briefly at the AMAL Editor and how you would write your AMAL programs using this facility. Now, let's give you a practical example of how to use the editor to write a program, in this first case to animate a sprite and move it around the screen.

To recap briefly, the AMAL editor is a special way of running the specially optimised AMAL commands in AMOS. Instead of embedding your AMAL programs into an AMOS program, you can write them using the AMAL editor, and load the code as an .abk file. The AMAL programs are all written to separate AMAL channels using the editor, and you can activate them one at a time for single operations or all at once if you want simultaneous running.

Each channel is viewed and used by clicking on its channel number which is located at the top of the screen.

AMAL EDITOR REVISITED

The Editor is divided into many parts, but for now let's concentrate on the main editor screen. The main screen shows the text editor, information line and the channel selector. You type your programs into the editor, changing channels using the selector, and typing a new program into each channel.

Editing using the AMAL editor is a fairly simple affair, and the controls are as follows:

Return key	Inserts a line
Ctrl-Y	Deletes a line
Tab	Jumps to next tab position
Cursor keys	Moves cursor one step in any direction
Shift+cursor keys	Start/end of line or Top/bottom of screen

Once you've written your AMAL programs to the editor you can run one or all of them with commands from the menu bar. The "Run All" and "Run Current" run every AMAL channel or just the one you have up on screen respectively. And finally the DEBUG menu option enters you into the AMAL Monitor, allowing you to run and debug your AMAL programs very precisely.

ENVIRONMENT EDITOR

As most AMAL programs aren't able to run in isolation from AMOS, there is an Environment Editor (EE on your channel selector) which is a special channel for you to type the special environment commands. Before you can use a lot of AMAL commands, some kind of initialisation is required from AMOS itself. To do this in the Editor, you need to use the environment commands. These are basically a range of important AMOS commands, which are executed at the start of you running the AMAL programs.

The environment commands are exactly like their AMOS equivalents, and are used to make the AMAL programs in your editor run as if AMOS was running too. They are:

```
Sprite Off
Bob Off
Rainbow Del
'
Screen Open
Screen Display
Screen Offset
Screen
Screen Close
Screen Clone
Double Buffer
Dual Playfield
Dual Priority
Load IFF <name>,<screen>
Colour
Get Sprite Palette <mask>
Flash
Flash Off
Set Rainbow
Rainbow
Load <name>,<number>
Erase <number>
Bob
Set Bob
Sprite
Set Sprite Buffer
Hide On
Update Every
Channel To Sprite <channel>,<sprite>
Channel To Bob <channel>,<bob>
Channel To Screen Display ↵
<channel>,<screen>
Channel To Screen Offset ↵
<channel>,<screen>
Channel To Screen Size ↵
<channel>,<screen>
Channel To Rainbow ↵
<channel>,<rainbow>
Set Reg <number>,<value>
```

The last command sets one of the AMAL registers A to Z to a value between 0-25. As well as these basic AMOS commands, there are a number of useful test commands

```
If Screen <number>
```

This command returns a true result if the numbered screen is open.

```
If Not Screen <number>
```

This command returns a true result if the numbered screen is closed.

```
If Bank <number>
```

This command returns a true result if the numbered bank is reserved.

```
If Not Bank <number>
```

This command returns a true result if the numbered bank is not reserved.

```
If Reg <letter>,<value>
```

This command returns a true result if the AMAL register mentioned equals the stated value.

```
If Not Reg <letter>,<value>
```

This command returns a true result if the AMAL register mentioned is not equal to the stated value.

Once you've entered the environment commands into the EE channel, they will be a part of the .abk file, for the next time you load the AMAL programs into the editor.

The EE channel is not executed as part of your AMAL programs when it's all loaded into an AMOS bank, so any commands which you used in your EE channel must be typed in by hand at the head of the AMOS program. Alternatively, you can, like me, use a universal 'cut and paste' type program like *PowerSnap* to do this, to save you having to write it all down.

As an important footnote to using the AMAL Editor, you must remember to open an AMOS screen if you intend using Bobs, or the Bobs will appear over the AMAL Editor (always screen number 7).

DEBUG IT

The AMAL Monitor is another similar screen which enables you to run and debug your AMAL programs easily and quickly. If your AMAL isn't running quite as sweetly as you intended, just slip into the AMAL Monitor and you have a range of debugging commands at your disposal.

Firstly you must initialise everything by selecting Init from the menus or by pressing I on the keyboard. Then you can use one of the following commands:

R	Run	Runs selected AMAL programs until a keypress
G	Go Until	Runs until a certain Reg = a certain value
S	Single Step	Runs the programs one step at a time

Go Until is a very neat way of testing parts of your programs, because you can insert a sort of breakpoint into your AMAL program. All you have to do is to set an AMAL Register to a certain value at a certain point in the program, and as soon as the program in that channel reaches the breakpoint, the program will break and return to the AMAL Monitor.

To quit out to the main editor again you just press the Esc key.

NEXT MONTH

In the next AMAL tutorial we'll be looking at Sprite movement and animation, plus looping within AMAL programs. Each example will be listed in AMAL editor and AMOS code form, ready for you to tap into AMOS or AMAL right off the page.

Join us then in a month's time for fast animation and super sprites. See you then!

continued from page 110

```
Procedure TRYIT
Shared X,Y
Print X,Y
End Proc
```

The Proc can now tap into the variables X and Y, and read and write to them. Other Procs cannot.

DEF II

Another neat Proc trick is the use of Parameter Definitions. This is a kind of reverse trick, where you pass a specific list of variables complete with their contents to a Proc as you define it, like this:

```
Procedure XIT[A$,X,Y]
```

The variables are loaded directly from the main part of the program, and the Proc can be called in two ways. Either you pass another variable to the Proc which has a value you wish to pass to the new variables in the Proc. Like this:

```
N$="Bob" : A=45 : B=3
XIT[N$,A,B]
```

Or you can add the precise values you want to fill these variables:

```
XIT["Bob",45,3]
```

This is one of the best ways to pass values from a main chunk of code directly to a Proc.

POP GOES THE PROC

Before we leave Procs for the moment, a word about Pop Proc is in order. The only way you can exit a Proc without going all the way through to End Proc is by employing the Pop Proc command. You would use it as a part of a conditional branch command like this:

```
GITIT
Print "Proc Popped"
'
Procedure GITIT
Input A$
If A$="yes" Then Pop Proc
Print "Proc NOT Popped!"
End
End Proc
```

This program shows you how to Pop out of a Proc without going to the end. The end of the Proc here is the end of the program. If you type "yes" at the prompt, you pop out of the Proc and you get the line "Proc Popped" printed to the screen. If you type "no" (or indeed anything except "yes", because this is a very crude program) then you drop through the conditional branch and hit the line which prints up "Proc NOT Popped!", with that little exclamation mark just for emphasis.

That's enough Proc-ing about for now. Let's drop that for a while and go back to the Copper bits I was talking about last time.

ELLO ELLO ELLO

As we found out in the previous issue, Copper routines give you lovely rainbow colour effects, like smooth graduated skies or seascapes... or just rainbow colours behind your text.

The Co-Processor in the Amiga, or COPPER chip enables you to show a different one of the 4096 colours available on the Amiga on each line of a screen. So you can achieve very subtle shading effects using very simple code. AMOS gives you the kind of access to these colour routines that previously only machine code could give you.

To obtain a rainbow text effect, you could try the following program:

```
' *** Rainbow Text by Snout
***
'
Cls 0 : Curs Off : Hide
Gosub STRIPI
For X=0 To 23
Pen 1 : Paper 0 : Print
"Rainbow text is easy for ↵
anyone to do!"
Next X
Wait Key
End
STRIPI:
Set Rainbow 0,1,280,"","",""
Rainbow 0,0,0,280
Colour Back 0
Restore RDATA
For C=0 To 279 : Read CVA :↵
Rain(0,C)=CVA
Next C : View
Return
RDATA:
Data ↵
$0,$0,$0,$111,$222,$333, ↵
$444,$555
Data
$666,$777,$888,$999,$AAA,$BBB
,$CCC,$DDD
Data ↵
$EEE,$FFF,$FFF,$EEE,$DDD, ↵
$CCC,$BBB,$AAA
Data ↵
$999,$888,$777,$666,$555, ↵
$444,$333,$222
Data ↵
$300,$200,$300,$400,$500, ↵
$600,$700,$800
Data ↵
$900,$A00,$B00,$C00,$D00, ↵
$E00,$F00,$F00
Data ↵
$E00,$D00,$C00,$B00,$A00, ↵
$900,$800,$700
Data ↵
$600,$500,$400,$300,$200, ↵
$20,$30,$40
Data ↵
$50,$60,$70,$80,$90,$A0, ↵
$B0,$C0
Data ↵
$D0,$E0,$F0,$F0,$E0,$D0, ↵
$C0,$B0
Data ↵
$A0,$90,$80,$70,$60,$50, ↵
$40,$30
Data $30,$0,$1,$2,$3,$4,$5,$6
Data $7,$8,$9,$A,$B,$C,$D,$E
Data $F,$F,$E,$D,$C,$B,$A,$9
Data $8,$7,$6,$5,$4,$3,$2,$1
Data ↵
$0,$0,$22,$33,$44,$55,$66,$77
Data ↵
$88,$99,$AA,$BB,$CC,$DD, ↵
$EE,$FF
Data ↵
$FF,$EE,$DD,$CC,$BB,$AA, ↵
$99,$88
Data ↵
$77,$66,$55,$44,$33,$22, ↵
$110,$220
Data ↵
$330,$440,$550,$660,$770, ↵
$880,$990,$AA0
Data ↵
$BB0,$CC0,$DD0,$EE0,$FF0, ↵
$FF0,$EE0,$DD0
Data ↵
$CC0,$BB0,$AA0,$990,$880, ↵
$770,$660,$550
Data ↵
$440,$330,$220,$101,$202,↵
$303,$404,$505
Data ↵
$606,$707,$808,$909,$A0A, ↵
$B0B,$C0C,$D0D
Data ↵
$E0E,$F0F,$F0F,$E0E,$D0D, ↵
$C0C,$B0B,$A0A
Data ↵
$909,$808,$707,$606,$505,↵
$404,$303,$202
Data ↵
$111,$222,$333,$444,$555, ↵
$666,$777,$888
Data ↵
$999,$AAA,$BBB,$CCC,$DDD, ↵
$EEE,$FFF,$FFF
Data ↵
$EEE,$DDD,$CCC,$BBB,$AAA,
$999,$888,$777
Data ↵
$666,$555,$444,$333,$222, ↵
$300,$200,$300
Data ↵
$400,$500,$600,$700,$800, ↵
$900,$A00,$B00
Data ↵
$C00,$D00,$E00,$F00,$F00, ↵
$E00,$D00,$C00
Data ↵
$B00,$A00,$900,$800,$700, ↵
$600,$500,$400
Data ↵
$300,$200,$20,$30,$40,$50, ↵
$60,$70
Data ↵
$80,$90,$A0,$B0,$C0,$D0, ↵
$E0,$F0
Data $F0,$0,$0,$0,$0,$0,$0,$0
```

The Cls 0 covers the screen with colour 0, and Curs Off and Hide blank out the cursor and arrow pointer for our demonstration.

But now here comes the impressive bit. Set Pen to the background colour black, and pape to the foreground colour, and look what happens when the loop fills t screen with text... Rainbow text!!! You could try using this technique hi-score tables for example.

AMOS DEMO CORNER

On CIX this month is a brilliant gar written in AMOS. It's called *Mined Out*, and it's by veteran Amigist Jolyon Ralph. It's a sort of comput joke really based on a Sinclair Spectrum game which was around years ago. But like most old game the playability is good, and as an example of the professional result you can get, it's very impressive. A get this: it was all written in just a day! The file is called "minedout.lz and it's in the files topic of the AMOS conference on CIX.

READ ALL ABOUT IT!

Peter Hickman, veteran AMOS-er extraordinaire, has written to me t tell me about a new magazine he's publishing called *All About AMOS.*

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Subs cost £15 a year (or 6 issues). You can subscribe by sending a cheque, PO or money order (to PJ Hickman) to: *All About AMOS*, Subscriptions, 36 Cleverly Estate, Wormholt Road, London W12 0LX.

That's all we have time for this month. Join me again next issue f more great AMOS action. AS

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Scale the heights of perfection

Paul Overaa delves deep into the art of sequencing in this month's MIDI series instalment.



"When it comes to making music, the Amiga can shine light on any orchestral manoeuvres which you dare make in the dark."
Paul Overaa

Sequencers (as you'll know from earlier instalments) can both record and play back the MIDI messages transmitted by a synthesizer or other MIDI instrument. They also provide extensive editing facilities and it is discussions about this area which form the bulk of this month's material.

Sequencers vary enormously in terms of editing facilities provided and in the names that they give to the various options. Fortunately the more common editing functions, ie those which tend to be available on most sequencers, are usually easy enough to identify from the manual descriptions of what they do.

The term 'editing' usually implies making changes to track or sequence data after it has been recorded. In practice the user also has some control over both the type of data to be recorded and the way that existing track/sequence data should be replayed. The usual arrangement is that the sequencer will have a special 'global parameters' page, or list of menu options, the settings of which will govern the way the sequencer actually behaves during use. It's here that the user can decide whether the sequencer should use an internal or an external clock, whether it should provide an audible metronome click or not, whether it should continuously loop through an N-bar sequence or not, and so on.

Other settings may involve things like being able to protect a MIDI channel from being transposed (which comes in very handy as we'll see next month), automatically sending MIDI start messages, or inserting gaps between groups of messages which might otherwise be sent as unnecessarily dense packets of MIDI data.

In addition, there may be any number of pre-record and post-record parameters and effects which can be selected. The difference between these two classes of controls is worth mentioning: pre-record parameters will govern the type of data actually stored in the tracks and sequences. Post-record parameters govern only how the stored MIDI data is played back.

A good example of a common global facility is that of MIDI message filtering and remapping. There are a few occasions when it is useful to be able to restrict the sequencer's recording or use of certain types of MIDI messages. Similarly it's often handy to be able to ask the sequencer to modify certain types of events.

The MIDI Echo/Thru option I talked about last month is one example of the usefulness of pre-record re-channelling but usually much more can be done... *Sequencer One*, for instance, has a 'Set Filter' option which allows many other types of MIDI messages to be filtered and/or modified. Note on/off, polyphonic aftertouch, program change, pitchbend, and controller information can all be selectively filtered out. It's also possible to convert channel aftertouch messages into controller data, remap controller numbers or even convert controller data into channel aftertouch messages.

At the moment I'll assume, since such things have yet to be mentioned, that terms like 'controller messages', and therefore these various message remapping (message transformation) facilities, will mean little to you. I've included some brief explanations among this month's Jargon Box entries but don't worry, I'll get around to properly explaining about the various MIDI message classes in the instalment after next. For now the important thing is to understand the significance of the fact that these particular *Sequencer One* facilities are of the 'pre-record' type. If, for example, you decided to set the *Sequencer One* up so that it would filter out program-change messages – any track data subsequently recorded would end up containing no program change messages at all (any program change messages that might have been present in the original MIDI input stream get lost forever). Most sequencers provide these types of pre-record filter options and Dr T's *Tiger Cub* (another brilliant entry level sequencer), *Music X*, *Harmoni* etc, all have similar (although not completely identical) facilities.

> **"Nowadays it is normally feasible to record everything and then decide, retrospectively, what MIDI data is to be kept and what should be discarded."**

Some sequencers are also able to produce filter and conversion effects *after* the data has been stored. These are post-record options and here the effects and settings work on the output side of the sequencer (*Bars&Pipes* incidentally is brilliant as far as this particular area is concerned and *Music X*, which, in general, gets little praise from me, is also good in this respect). If you used a post-record filter option to remove program-change messages you would not prevent these messages from being stored in the track or sequence but, even though they ended up being present, any program-change messages would be skipped over (ie ignored) when the data was played back.

The big difference of course is that if, in the latter scenario, you cancelled the program-change filter option, any 'hidden' program-change messages would be brought to life and would again become part of the sequencer's output stream.

Post-record options have the benefit of flexibility because you can always undo a particular setting. Pre-record filtering options however do still have a use as far as the elimination of the storage of unnecessary information is concerned (used to be handy on machines where memory was tight). They have however become increasingly less attractive as the general editing facilities of commercial sequencers have become more powerful.

Nowadays it is normally feasible to record everything and then decide, retrospectively, what MIDI data is to be kept and what should be discarded. *Sequencer One* for instance includes facilities for selectively stripping out particular event types from a given track. Again most sequencers offer similar facilities and with some it is possible not only to strip events but to divert those isolated events to another track! Such facilities have of course taken us well away from the area of global setting-up options and have brought us nicely into the main topic for this month...

SEQUENCE EDITING

At the highest level you can, if you make a mistake while you are recording your latest masterpiece, delete the track or sequence and start again – recording, and re-recording, until whatever it is that you are trying to play sounds perfect (or as near perfect as you need it). Sometimes, if you've made a complete hash of it, that's probably the easiest thing to do anyway!

Usually things are not quite that bad – you'll find yourself in a situation whereby most of what you've played sounds fine, but there are one or two places where noticeable slips have been made (a few 'duff' notes or a few bars where the 'musical timing' could have been improved).

Wouldn't it be nice if it were possible to go back and change those bits that weren't quite right? Nowadays you can, and with a sequencer it is actually possible to look at the individual notes in the track or sequence, remove ones that shouldn't be there, add notes that should be there or perhaps alter the

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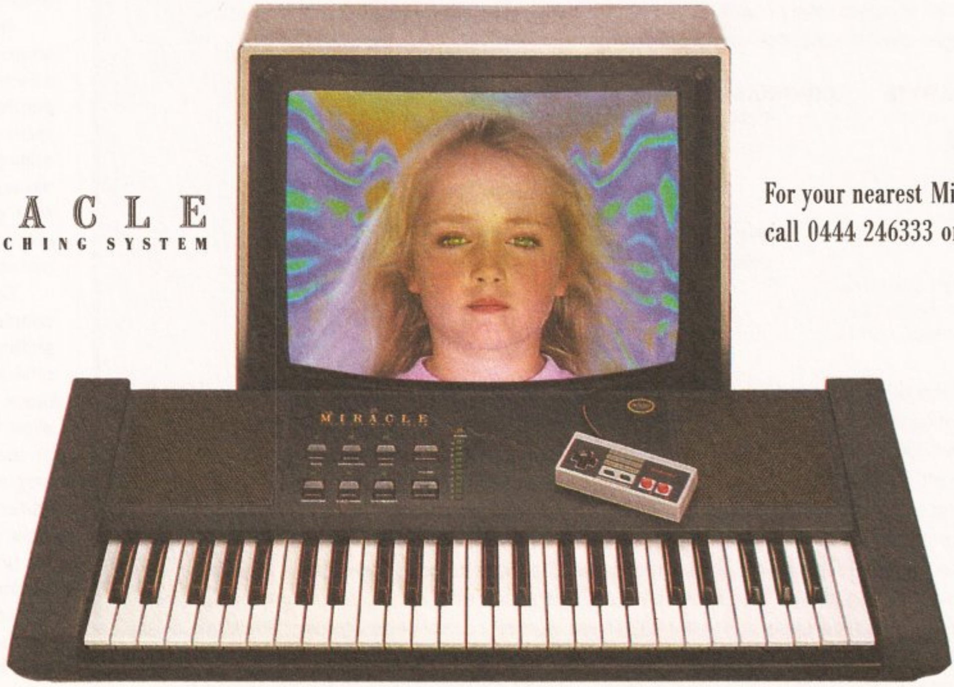
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Polyphonic Aftertouch (Polyphonic Key Pressure) – Some MIDI keyboards respond not only to the initial velocity with which keys have been hit, but also to variations in pressure after the keys have been held down. These pressure variations are translated into individual key-pressure messages and transmitted whenever a change of pressure is detected. Sounds great? Yes it is, but keyboards which offer true polyphonic aftertouch are also very expensive. Most keyboards opt for the more economic 'average pressure' approach sending overall channel pressure messages instead (see below). One of the disadvantages of true polyphonic aftertouch is the volume of extra MIDI data which gets transmitted. This causes two problems. Firstly, the extra data can contribute to the so-called 'MIDI clogging' problems where so much data goes down the MIDI lines that things, from a communications viewpoint, start to go wrong. Secondly, you'll be eating up a lot more sequencer memory because of the extra data it has to store. Polyphonic aftertouch messages are three bytes long and, in terms of the binary numbers transmitted, have this type of format:

STATUS BYTE	NOTE NUMBER	PRESSURE VALUE
1010 nnnn	0xxx xxxx	0ppp pppp
The 1010 part indicates polyphonic aftertouch. nnnn is the channel number.	Identifies the note itself.	Gives the current key pressure as a velocity value.

Channel Aftertouch (Channel Key Pressure) – These provide a sort of 'average pressure' which applies to all notes sounding. Keyboards which transmit this type of data send aftertouch messages which contain two bytes. The message format looks like this:

STATUS BYTE	PRESSURE VALUE
1101 nnnn	0ppp pppp
The 1101 part indicates channel aftertouch. nnnn is the channel number.	Provides an average pressure value.

Controllers – MIDI has some messages specifically allocated to a set of 'controllers'. By sending a synthesizer the right type of controller messages it's possible to modify certain synthesizer effects just as if you were fiddling with the synthesizer controls themselves. Similarly when real synthesizer controls, such as the mod-wheel, are touched, the synthesizer itself will generate an appropriate controller message. The MIDI standard defines both continuous controllers (which are meant to simulate rotary controls) and on/off switch type controllers but in terms of the structure of the MIDI messages they all have this 3-byte arrangement...

STATUS BYTE	CONTROLLER NUMBER	VALUE
1011 nnnn	0ccc cccc	0vvv vvvv
The 1011 part indicates a controller message. nnnn is the channel number.	Identifies the controller.	Controller will be set to this value.

Some controllers have MIDI standard recommended uses; a synthesizer's mod-wheel for instance should generate controller #1 messages, MIDI volume messages should use controller #7. Your synth manual will tell you what controllers, if any, your synthesizer transmits or understands. The important thing to realize is that these message <->effect relationships are 'soft' and at the end of the day it is the synth manufacturer which decides how a particular synth will respond to particular controller messages. In some cases the message<->effect relationships can be changed by altering the internal settings of the synthesizer itself and these synthesizers are said to have 'assignable controllers'. Such a synth could, when receiving mod-wheel messages, be made to use those values to alter a completely different effect. Similarly it might be able to modify its mod-wheel settings when receiving messages on a controller other than the conventional mod-wheel controller #1. These type of 'controller assignment' facilities, which are very manufacturer dependent, are very useful but are normally only found on the more expensive synthesizers. I'll be saying much more about controllers in instalment five where we have an in-depth look at the more technical aspects of the MIDI spec itself.

continued from page 114

pitch or duration of some existing notes. Having made such changes, you just hit the sequencer's 'play' button and the 'corrected version' will sound the way you wanted it to sound in the first place!

Even relatively short sequences can contain a lot of MIDI information and, when the status bytes and associated data bytes for each and every sequencer event are shown, the end result can be quite intimidating to the non-technical user. More to the point, the few events which you might be interested in editing can easily get lost among the rest of the data. If, for instance, you just wished to edit or remove a couple of program-change events, then having to look through a list containing hundreds of note events (perhaps intermingled with pitchbend and other MIDI messages) would make a simple task quite time-consuming. Over the years, then, it has become apparent that offering the user complete and detailed event lists is not always appropriate.

The key to eliminating the problem of inadvertently providing the user with too much information is simple: only provide enough event detail to get the job done. If a user wants to edit program-change events within a track or sequence, then offer them a display which only shows program-change messages. If they want to copy and shift around bars of music but are not interested in the detailed contents of those bars, provide a display which allows the track or sequence to be shown as graphical blocks that can be 'cut and pasted' around without the user having to see the underlying masses of detailed technical MIDI data.

All these ideas have led most sequencer designers to adopt editing schemes which offer both high-level graphics-based editing as well as low-level, individual event-based, editing. Bar editors nowadays tend to always be graphics oriented with MIDI data just being represented as coloured blocks within a track versus bar position framework.

Some sequencers just provide simple cut/paste type facilities for shifting sections of music around, others allow the user to click on a block and view it in more detail or allow the basic block style display to be used for displaying note data, program change data or any other particular MIDI event type. If, for instance, you wished to find and edit the program change events within a particular track it might be possible to open a special program change window. With this display all the note data and other non-program-change information would be invisible, so, finding the one or two coloured

continued on page 11

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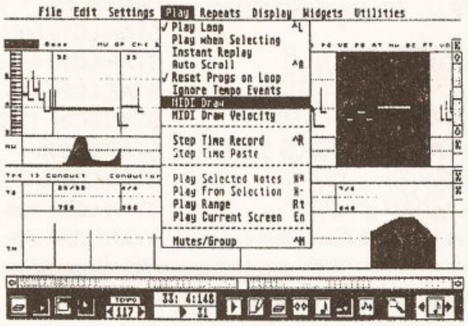
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TIGER, the realtitme graphic editor, Quickscore, the notation module, Automix, the graphic faders & PVG are just a few of these tools. Couple this with Dr T's MPE environment where multiple programmes can 'share' data in real time and a newly designed front panel, KCS 3.5 is the answer to all your prayers.

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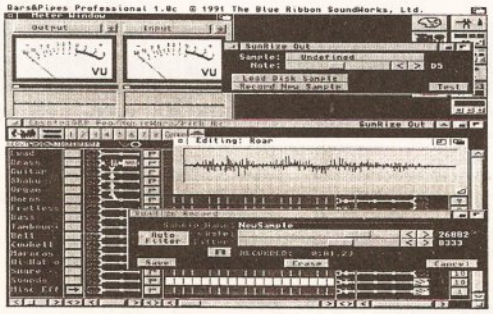
Paul Overa, Sound On Sound Oct. 1991

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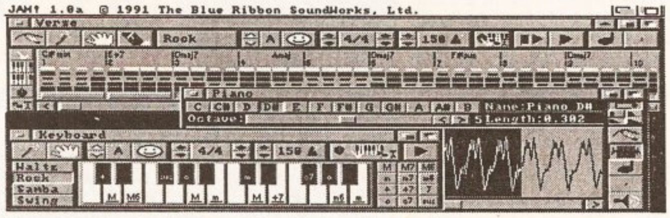
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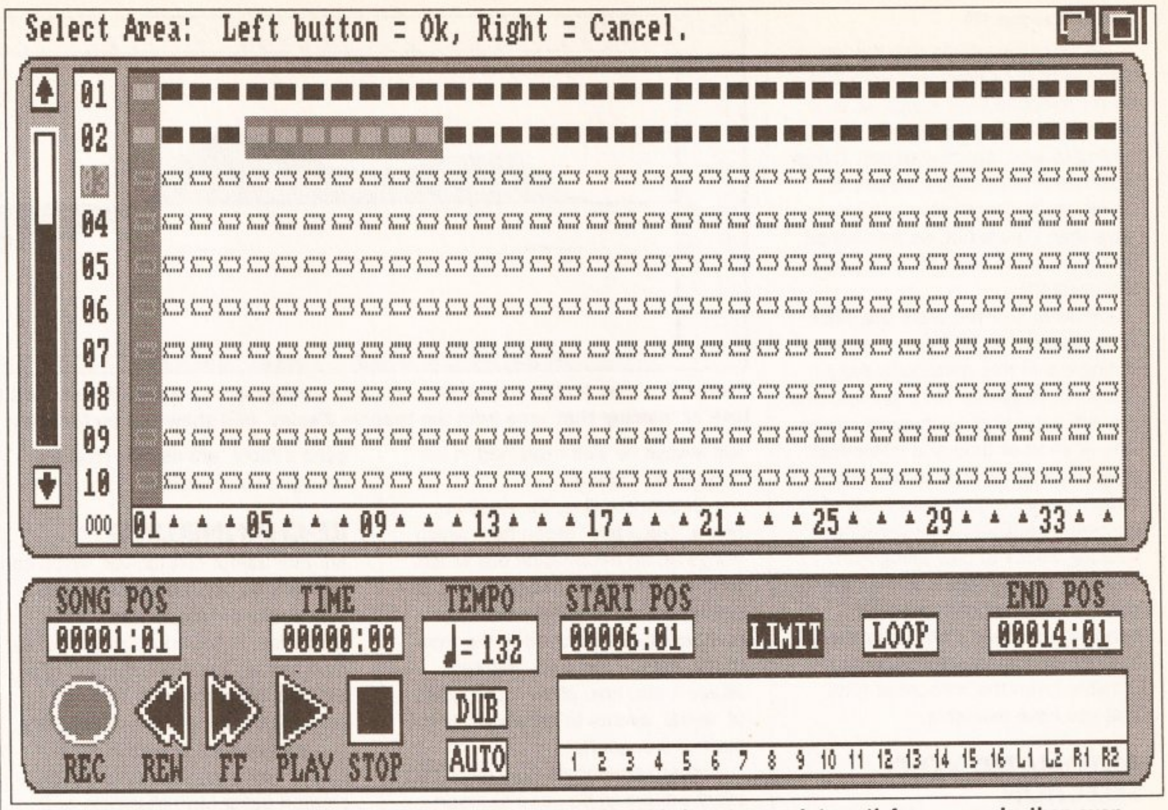
locks which represented program-change commands would be very easy. Clicking on the located blocks might then bring up a requester showing the current program-change value and giving you the opportunity o change it.

With all editors it is usually possible to perform global operations, eg transpose (change the key) all the note data within a track, change the MIDI channel of the stored data etc. It is usually also possible to mark out a section of that data and perform the same operations on just a limited range of events.

Of course, while the basic ideas of information hiding are recognized by all sequencer designers as being both useful and necessary, almost all adopt different approaches to solving the associated problems. Some provide bar and event editing within a single editor, others provide completely separate bar and event editors. Similarly the sophistication of the editors varies considerably – even within products of similar price ranges. *Sequencer One* for instance provides a fairly basic bar editor which displays the song as a block graph of track number versus bar contents. Thirty-five bars are shown on the display and as the song plays the display scrolls so that the currently playing bar is near the centre of the screen. Empty bars are shown as empty (outline) boxes, bars which contain MIDI data appear as black boxes. To get more detailed event information *Sequencer One* provides a separate 'Step Editor'.

Tiger Cub, the Dr T's entry level sequencer provides a rather more sophisticated scheme based around the use of scrollable track and controller windows. Notes are displayed in *Tiger Cub* as variable size horizontal blocks (the length of which represents a note's duration) coupled with vertical velocity stems. Both of these can be directly adjusted graphically with the mouse.

Continuous controllers, program changes etc, can be assigned to their own special windows. The emphasis here is on making as much use of graphic-mouse operations as possible. If, for instance, you wish to create a crescendo (a section in the music where the volume gets gradually louder over a period of time) you can scroll to the appropriate section of music and sketch in a 'volume curve' using the mouse. Full mouse oriented cut & paste editing, note drawing, range selection, pitch/velocity/duration editing and note move operations are all extremely easy to carry out. If, for instance, you wish to move a group of notes you just mark them out with the mouse, pick them up and 'drag' them to a new position.



Here's *Sequencer One's* bar editor in action. And if you find that this is not enough to satisfy your needs, then even more detailed information is provided in a separate 'Step Editor'.

Tiger Cub, if you haven't yet realized, is a clever piece of software and its editing facilities have been very well designed. *Tiger Cub* is another offering which is ideal for users who want a good quality entry level sequencer. It costs £99 and can be obtained from Zone Distribution (☎ 081-766 6656).

So, what from an editing angle are the other things you can do with a MIDI sequencer? The bad news here is that even simple sequencers usually have so many different options and facilities that covering every possible editing operation would take a series in itself. Instead, I've limited myself primarily to a small selection of topics which, for new users, are (arguably) the most important...

QUANTIZATION

When you quantize a track or sequence, you ask the sequencer to look at the time positions of the various events and change them so that they fall on well-defined time barriers. Supposing, for example, that you wanted to play a bass line theme which contained four evenly spaced, single beat duration notes per 4/4 bar (this is what musicians call four crotchets to the bar). You'd pick a suitable tempo, set the sequencer recording, and then play the bass notes. Although your timing might be reasonably accurate, it is unlikely that it would be one hundred per cent perfect. What you could then do is ask the sequencer to globally 'adjust' the note times of the notes present in the track so that, after rounding up or down, they fell *exactly* on the divisions corresponding to the four beats in a 4/4 bar. After you had quantized your bass line track the 'timing' would then be perfect!

Now this is all very well but there is a snag. Simple quantizing schemes which basically adjust all notes to some user-defined time partition (4, 6, 8, 16, 32 notes per bar etc) tend to make the music sound 'mechanical'. In fact it is often the subtle timing and note duration variations in a musician's performance which make it sparkle and sound 'live'. Quantize everything and make it perfect, and the sparkle disappears. (There is therefore a very good case for not quantizing every piece of MIDI data in sight!)

Nevertheless, for many MIDI users (especially those who have to play keyboards, despite the fact that they are not primarily keyboard players) quantization remains an extremely useful facility to have. It is also one of the many sequencer facilities which are becoming more and more powerful because, over the last few years, a lot of effort has gone into finding suitable compromise schemes based on 'partial quantization'. One option is to tidy up the notes a bit without making the timings 100% perfect. Another is to only quantize those notes whichlie very near the hypothetical quantize division lines. Some sequencers may offer random improvements so that not all notes are time-adjusted by the same amount, but all are improved a bit. Quantization is another facility which tends, as far as implementation and use details are concerned, to vary from sequencer to sequencer. Gajit's *Sequencer One* allows the beginnings of notes to be quantized while keeping the note endings unchanged. *Tiger Cub* allows the first note in a bar to be fixed (quantize protected) and then allows the quantization of subsequent notes to be made relative to the first note of the bar's time frame. It also allows variable offsets to be added so that a 'swing' feel is introduced to the music. *Harmoni* (an Amiga sequencer produced by The Disk Company) lets you quantize note start times, note durations or both. Some sequencers, and *Tiger Cub* is one example, provides both real-time (pre-record) quantizing and normal edit style quantizing. As you go higher up the scale in sequencer power you find more and more sophisticated quantizing schemes being added.

TRANSPOSITION

Transposition, changing the key of either all or part of a track, is another 'goodie' that comes in very useful at times. If, for example, a piece of music contains a melody that is re-used later in different keys, it's possible to paste in copies of the melody (at the appropriate positions) and transpose them as required.

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A lot of musicians use the key of C for all of their keyboard work and then transpose their songs up or down to the required key – it saves having to work out how to play things in different keys. (Most pieces of music are harder to play in some keys than others but, as mentioned last month, the key of C is invariably the easiest!).

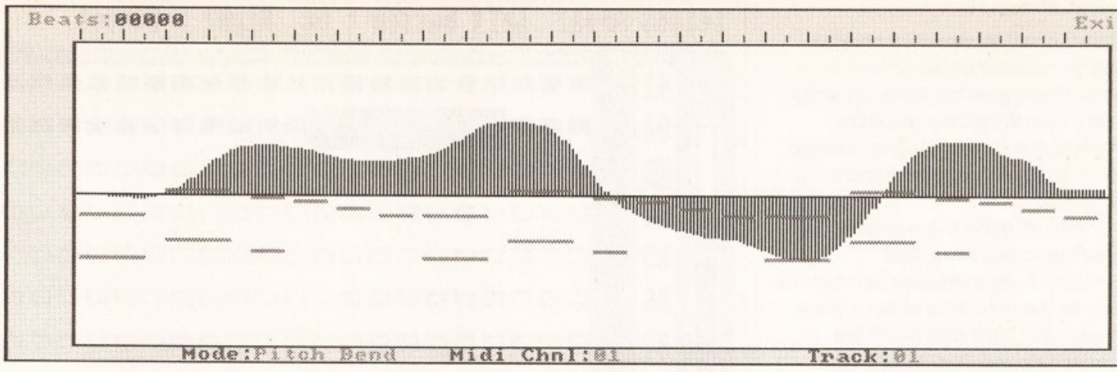
Believe it or not there are even valid reasons for serious musicians opting out in this admittedly easy fashion... Suppose, for instance, that you are a guitarist or trumpet player who is short of time and interested only in using the synthesizer and sequencer as a convenient way of generating MIDI data for creating backing tracks to play along with. You may decide that learning how to play a piano keyboard properly, especially since it's not really the instrument that interests you, is not feasible given the amount of time that you have available.

AUTOMATED VOICE SELECTION

Last month I talked about how multi-track sequencer data can be built up with different MIDI channels being used to represent the melodies to be played on different instruments. I also spoke about the relationship between program change messages, synthesizer voices and multiple 'multi-timbral' voice settings. By adding suitable program change events to the sequences that you create it is possible to get the synthesizer to automatically select appropriate voice (or multi-timbral voice) settings.

You might get the impression from last month's instalment that the easiest way to add a program change command to a sequence is to manually make the change whilst you are recording the track (most synthesizers would sense the change and automatically transmit a program change message). In practice this can work but it is usually easier to insert the program change messages after you've done the recording because trying to hit the sequencer's play/record button, select a voice and start to play (in time) on the first beat of a song is usually far from easy!

The exact way that program change messages are added is, like most sequencer operations, invariably sequencer specific. However, providing you have worked out what program messages are needed, it is always easy to do. Some sequencers just require a number to be inserted in the track list information, some have dedicated menu options, others will require the event to be inserted using the event editor – such things will always be well explained in the sequencer manual.



Overture, a new Amiga sequencer, also has good graphic editing. It shouldn't be long before someone takes on the task of 'naming that tune from the graphic display' and shows up on Matthew Kelly's challenging *You Bet*!

Sequencer One, for instance, has a 'Track Info' menu item which brings up an information box which, among many other things, allows a patch number (a program change number) to be attached to the front of the track. *Tiger Cub*, *Harmoni*, *Music X* etc, also allow these types of 'initial' events to be placed at the start of a sequence.

Most sequencers also allow their event editors to be used to insert program change commands at places other than the start of a track or sequence. Now at this point you might be asking why you would want to insert a program-change command into the middle, or possibly the end, of a sequence. There are several reasons for this. The first possibility is that you might simply wish to change the synthesizer's voice settings half way through a song. The second possible reason is that you may be controlling some other piece of equipment which is turned on when the song starts and turned off just before the song ends (digital reverb/delay units, which create echo effects, are usually program change controllable).

RE-CHANNELLING

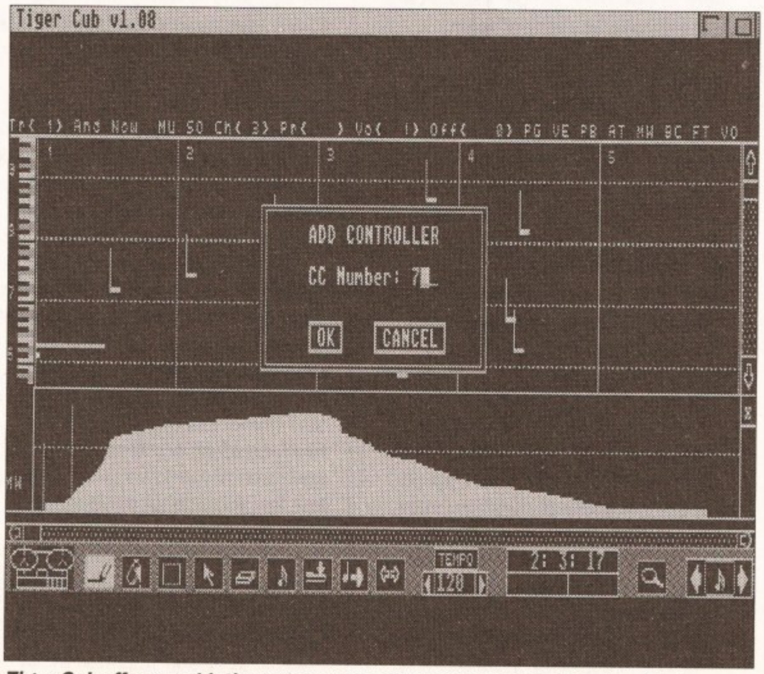
Another useful edit facility, which can normally be applied to either whole sequences or ranged parts of a sequence, is the conversion of data recorded on one MIDI channel to a different MIDI channel. This, not surprisingly, is called re-channelling.

Imagine that a 3-track piano/violin/bass song has been created using MIDI channels 1, 2 and 3 respectively, but that the multi-timbral synthesizer setting also has a spare channel (set to MIDI channel 4) available but not in use. Our hypothetical user might decide to make use of the extra channel/voice slot to include a second violin sound hoping to 'thicken up', that is harmonically enrich, the original violin sound.

This is very easy to do and in the above example it would just involve copying the existing MIDI channel 2 to a spare sequencer track and then re-channelling the new track so that all channel 2 events were converted to channel 4 events. If the two voices then sounded too similar to be distinguishable some extra editing could be done – a small time delay (usually called a time shift) could be added to one of the tracks, or the second violin track could be transposed up or down an octave. Some sequencers will even let you add small random variations to the note timing so that the second track begins to sound more like a second musician trying to play in unison.

This type of process forms the basis of something called 'sound layering' and it's a trick which has been used in studios for years to improve weak sounding voices (this includes the voices of vocalists as well as instruments). With the MIDI sequencer, instrument sound layering can now be done with almost no additional effort at all. A complete track can be copied, re-channelled and modified within a couple of seconds and when a separate sound module is being used to generate the layered voice it is possible to use the sequencer's program change editing facilities to step through, and (by playing the sequence) listen to, lots of potential layering voices without ever leaving the sequencer.

Of course in the old days these sorts of tricks were only available in the studio. Only the Rick Wakeman type musicians (who used up to half a dozen synthesizers at the same time) could duplicate it during a live performance. Nowadays anyone can improve the sound of their synths using these types of voice layering techniques!



***Tiger Cub* offers sophisticated control over your musical data. Creating a crescendo, for example, is as simple as sketching one in with your mouse.**

TO FINISH...

That's about it for this month. You'll find plenty of other edit-oriented descriptions in your own sequencer manuals and these will provide rather more 'sequencer specific' insight into the general issues I've talked about in this month's instalment. In the next issue I'll be talking about percussion and, among other things, I'll show you how the sequencer can be used to create drum parts, ie percussion accompaniment, for the rest of your MIDI music! AS

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Tackling the age-gap

Pat Winstanley and her team of testers put educational software through its paces

Although most schools now apparently bristle with computers, the amount of hands-on time for any particular child in school remains strictly limited.

Recently I took a class of eight-year-olds for a couple of afternoons, updating the database where they had stored personal and family details together with favourite foods (mainly burger and chips!). During the time it was vividly clear which children had regular use of a computer at home. While not particularly quicker at the academic task than the other children, the home users' confidence with the keyboard and general operation of the machine (RM Nimbus PC) shone through. With some time left at the end of the session several children gathered round to play through a text adventure. Again the same group of experienced children shone in their quick grasp of the principles involved, and the suggestions they made for inputs to try.

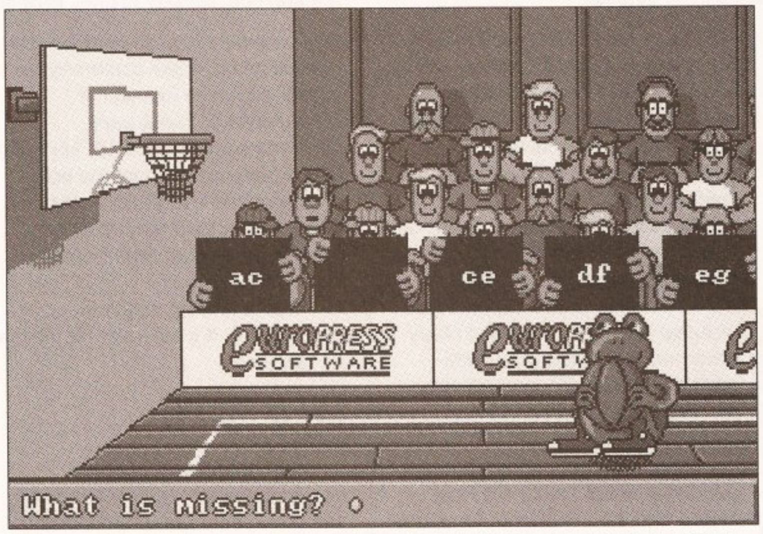
On enquiring I discovered that few of the 'experienced' users had been exposed to anything but shoot-em-ups at home. However that limited exposure had given them both the curiosity to find out what else computers could do, and the confidence to experiment by trial and error – one of the best ways to learn anything.

As parents we need to approach the Amiga at home from two angles. First we must give children confidence in handling the machine, and second we need to channel their program choice towards mind-expanding rather than mind-deadening programs. While the latest shoot-em-up will deal effectively with the first goal, it fails abysmally on the second. The problem with attaining the second objective is that children have generally had enough of "boring lessons" when they come home. The kids would fancy a tedious drilling program about as much as a wet weekend, and would rather curl up to watch *Neighbours*.

Choosing educational software is a matter of grabbing their interest first, then looking at the educational content of a package second. Both factors are important, but parents and children do tend to have opposing priorities.

The programs tested this month fall right in the middle and at both ends of the fun v work range. The *Fun School* series is intended to grab first and educate later, while *Back to Basics* provides sheer drill. In the centre lies *Maths Adventure* which uses alternating drill and games.

The *Fun School* series now in its fourth incarnation, though only the third on the Amiga, has proved extremely popular in the past with parents and children alike. Each package consists of six different games, between them covering a range of National Curriculum objectives. The activities are presented via cute characters with whom children quickly identify. All controls (mainly mouse, cursor keys, [RETURN] and [SPACE]) are simple enough for little supervision. Europress have managed to come up with a whole new range of settings for the activities, but there is a major and perhaps fatal flaw in all three packages – they are simply too hard for the suggested age ranges.



While our testers dealt well with alphabetical skills, a later stage of testing knowledge of square roots was felt to be a little too complex

My testers cover a wide range of ages and abilities. All are fairly competent with computing in general, in particular the Amiga, and need little if any help with operating and loading instructions. They can get on with the games with no distractions. Unfortunately, they couldn't handle the level of difficulty set by the games themselves. What appears to have happened is that topics which are expected to be only appreciated at particular levels, have been attacked as if the child is already competent and ready for the next stage. This is not usually the case.

A good example of the difficulty level is the highest stage in *Basketball* (5 to 7 package). A child is asked to work out the rules applying to a sequence of letters or numbers and supply the missing entry. I'd be interested to know how many seven-year-olds could even recognise "1, 4, 9, 16, 25, 36" as being squares of 1, 2, 3, 4, 5, 6 let alone figure out the next in the sequence.

Another sequence has pairs of letters, the first of each pair going one way through the alphabet and the second the other way. My seven and eight-year-olds were totally stumped, and so was the second year senior pupil from next door. The manual states that "Several of the sequences... may prove difficult for some children. Despite this they should have no problem in completing each game as a full on-screen explanation is given for the relevant sequence when a child enters an incorrect answer." Phooey! It's no use just telling a child that the correct answer involves a series of squares when that child only understands the word "squares" as shapes, not numbers.

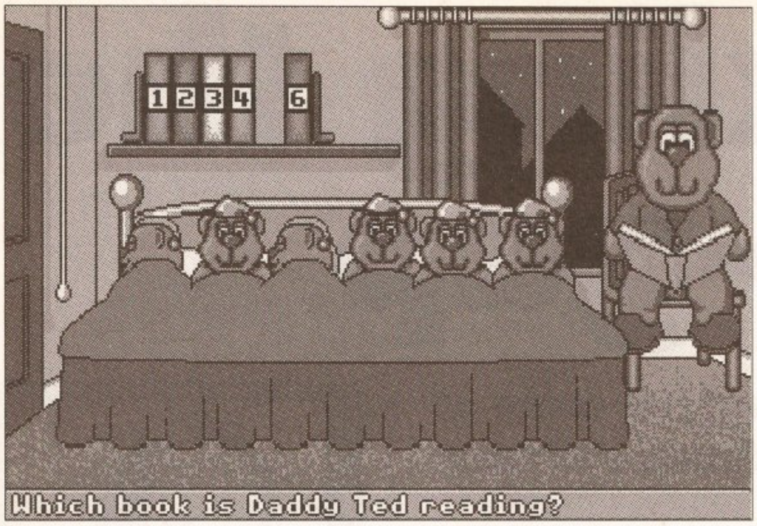


"Educational software can be brilliant or dire. Of course, it all depends on the use to which you put it."
Pat Winstanley

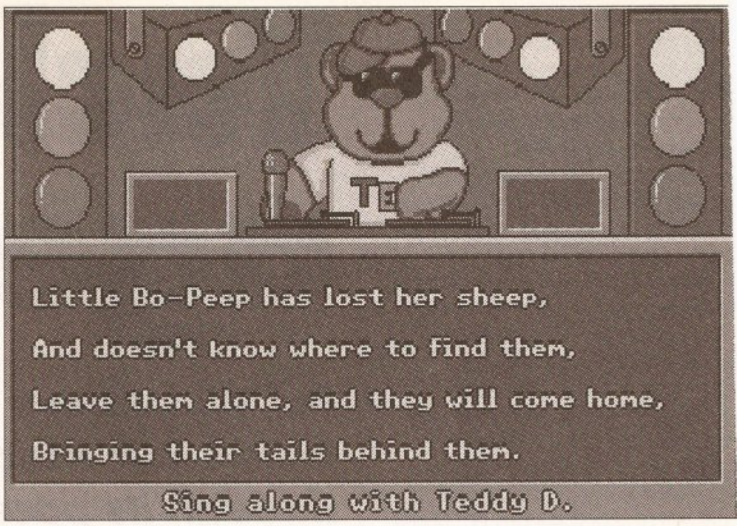
Any parent contemplating the purchase of a *Fun School 4* pack should ask their local dealer for a demonstration first (with their child actually using the package). Ignore the actual ages on the boxes. The 5 to 7 package challenges juniors and 7 to 11 challenges seniors. Having said that, pick the right package and your child will have lots of fun – and revision, but don't expect the programs to teach new concepts. All the *Fun School* packages (versions 2, 3 and 4) are excellent value for money and a good halfway stage between shoot-em-ups and drillers – but check their suitability for your child before buying.

FS4 (UNDER 5)
pre and early school

This is undoubtedly the best in terms of age/ability targetting. Each of the activities is ideal for the child to sit with an adult (or older sibling). Action on-screen needs careful demonstration for the youngest children, explanation for those slightly older, and toddler interaction for the oldest. The six games include a very simple painting program which is anonymously keyboard driven. Various keys give different effects when pressed and the younger testers found the uncertainty of what



***Teddy's Books* deals with mathematical skills. Here's hoping the rather cute graphics won't distract from the software's main purpose**



***Karaoke* is definitely in tune with the Karaoke craze, although here it's with a difference, nursery rhymes instead of the latest hits**

to expect an added spice. Older ones wanted a list of what each one did – perhaps a useful indexing exercise in itself. Still on the painting theme, but more structured is *Teddy's House* where children are asked questions about various colour choices.

Counting and early sums are covered in *Addition* which combines delightful animation with the recognition and correlation of numerals and quantities. Also dealing with numbers is the misleadingly named *Teddy's Books*. Here the child must decide which number of a series of volumes is missing from the bookshelf.

Fun Train is the only overtly language-based program and has the child stopping a fairground train when its contents match the picture and/or word at the boarding point. For the very youngest (my local tester is two and a half and loved this one) there is a sing-along nursery rhyme karaoke – simple and fun with the ever popular ball bouncing over the words of the song, but only music is audible, no lyrics.

FS4 (5 TO 7)

top infant/junior

Europress have certainly come up with some novel scenarios with this pack; what a pity they are so wildly out in age range. Set your five-year-old going on this and it will all end in tears. On the other hand, try rising sevens (this year's SAT candidates) on the simplest levels and you'll have a valuable resource lasting for several years.

The six games cover a variety of topics from learning about coins, shopping and change through alphabetical order and series. Also included is a very simple and nicely presented arithmetic driller with addition, subtraction, multiplication and division all treated in a well-graded manner.

Word recognition is covered in *Opposites* where Freddy the Frog hops round the pond on lily leaves to match pairs such as hot and cold, life and death and so on. Unfortunately very comical early animation plans appear to have been lost from this game – memory restraints no doubt.

Basketball was covered earlier – enough said, and the *Typing* game is yet another example of rather strange planning. The idea is to copy type letters, words and eventually sentences shown on screen, but the letter combinations seem to bear no relationship to those commonly used in typing courses (manual or computerised). Surely early familiarity with the QWERTY keyboard is best approached from the point of view of eventual touch typing ability, rather than the two finger pecking many journalists (myself included) use.

In all this is an excellent package, but it's aimed at far too low an age range.

FS4 (7 TO 11)

senior/adult

As with the last package, this one contains six highly entertaining scenarios, now featuring *Sammy the Spy*. Sammy is fun. He's well animated and very amusing as he gropes his inept way through the games, waiting for the child to rescue him from his predicaments.

Again as we saw with the last pack, the age range given on the box is highly misleading.

These six games are for around ten-year-old upwards, although younger children enjoy watching and helping where they can.



In *Shopping* you help Freddy the Frog navigate his trolley through the supermarket, by helping him out with his loose change

Topics covered include geography, history, maths in the form of exchange rates, timetables, decimals/percentages/fractions and a trivia quiz combining all those and science as well.

My early junior and early senior testers had a great deal of trouble coping with the questions in this pack. Control was a doddle, but when the trivia quiz suddenly shifted up a level automatically after only two correct answers the children were all a little taken aback. A batch of local adults was then roped in and they too found the quiz hard going.

As for timetables – everyone rapidly became confused after the first difficulty level. It's a shame that such a good set of ideas should be spoilt for lack of difficulty control. Unfortunately lack of that control is likely to make the package gather dust on a shelf rather than act as an increasingly useful resource in the future. Have Europress forgotten that programs like *Fun School* are not one-month chart wonders but continue in use long after the hype has worn off?

MATHS ADVENTURE

primary/early senior

Here's a program which appeals on several levels. Initially the child is presented with various maths questions which must be answered correctly in order to play a game. However the presentation of the questions themselves lifts the appeal of the package above any other maths program I have seen.

The basic layout of the screen remains constant throughout, as does the answer input method (keyboard) but the questions themselves are presented in both a variety of formats (multiple choice, straight answer and so on) and more importantly in a variety of different fonts.

continued on page 13

I'm always interested to hear your news and views whether it's an educational program or gadget you find useful or violent disagreement with my opinion. Write to me at Amiga Shopper or (if you're rolling in the readies). E-mail me as peewee @ cix where I haunt all the Amiga conferences I can find including our own – Amiga Shopper.

The written age guides (given in reviews for each program after its name are those arrived at by testing packages with children (and adults) both older and younger than the publisher's recommended age groups. Special thanks to Philip and Jamie Winstanley, Michelle and Marie Perry and Robert Taberner.

RATINGS • RATINGS • RATINGS

	Educational Value	Ease of Use	Flexibility	Addiction	Overall Value
FS4 (under 5)	4	4	3	4	4
FS4 (5-7)	4	3	3	3	3
FS4 (7-11)	5	3	3	3	4
Maths Adventure	5	3	4	5	4
Back to Basics	4	1	3	1	2

EDUCATIONAL CONTENT AND VALUE

	Maths	Lang	Science	Reflex	Logic	Revise
FS4 (under 5)	Y	Y	N	Y	N	Y
FS4 (5-7)	Y	Y	N	Y	Y	Y
FS4 (7-11)	Y	Y	Y	N	Y	Y
Maths Adventure	Y	Y	Y	N	Y	Y
Back to Basics	Y	Y	N	N	N	Y

SHOPPING LIST

Fun School 4 (under 5)......£24.99
(5-7), (7-11) (each)
by Europress Software
Europa House, Adlington Park
Adlington, Macclesfield SK10 4NP
☎ (0625) 859333

Back to Basics............£39.00
HB Marketing, Unit 3, Poyle 14
Newlands Drive, Colnbrook
Berks SL3 0DX
☎ (0753) 686000

Maths Adventure.........£25.99
Kosmos 1, Pilgrims Close
Harlington
Dunstable LU5 6LX
☎ (05255) 3942/5406

continued from page 128

Many of the questions, shape and form topics particularly, also present simple graphics. These can either illustrate the subject of the question or be themselves asked questions about. This is drilling given a welcome dash of spice which actually adds to the value of the drill rather than prettying things up as an afterthought. The method is used very imaginatively and extremely successfully. Questions are well matched to their given levels and include such gems as describing the shape of a tin of baked beans, or requesting the number of sides on a 20p coin (I got it wrong). Having correctly answered the required number of questions (half of them) the child is given the option of playing a game or doing more maths.

Four games are available, but only one is accessible at first. The child must build up his or her score by answering questions. Only when the score has increased enough will more game options appear. Another way of increasing the score is to successfully complete a game. At various times a results table is available which gives details of success or otherwise in particular topics and levels.

If your machine has 1Mb of memory plus a printer, the results table can be printed out – a touch most kids love, their own personal certificate. From a child's point of view, the 'maths trivia' style of the questions is extremely attractive and interest is held easily. While youngsters will not appreciate the extent of National Curriculum coverage, Kosmos have taken care to cover a substantial part of its content for levels 1 to 4 (up to about age 14). The difficulty levels are set well, with enough challenge to keep children guessing yet not so much diversity of difficulty within a level to put them off.

Included in the package are two leaflets from the National Curriculum Council, one for primary and one for secondary parents. Each gives a very simplified but well illustrated round-up of Key Stages, Levels and Targets. For non-teaching staff the confusion of these terms is enormous and even the teaching staff have had to go back to school to learn the new system – what hope the poor parents. The inclusion of these leaflets are an indication of the care and thought which have gone into this product. Kosmos are educationally "green."

BACK TO BASICS

primary/early senior

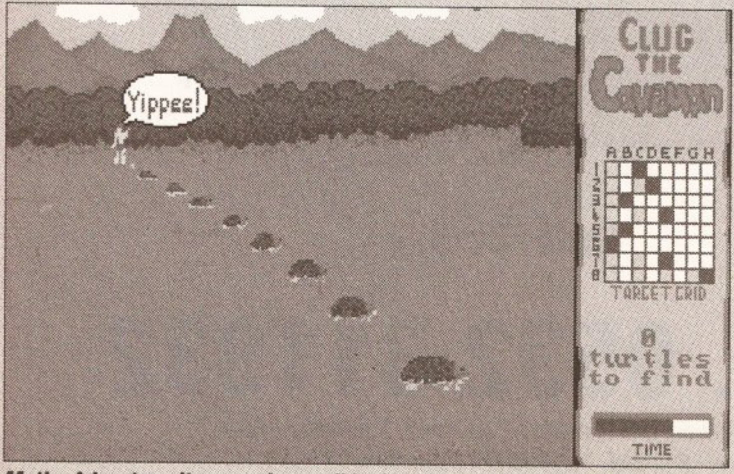
The problem with educational software is that it cannot easily teach. Despite speech and on-screen demonstrations, maths in particular is a difficult subject to handle beyond simply presenting sums for the child to do. However the sums are prettied up, in the end it all comes down to the drilling.

Back to Basics, sourced from New Zealand, does its best to 'instruct' the user but somehow manages only to confuse.

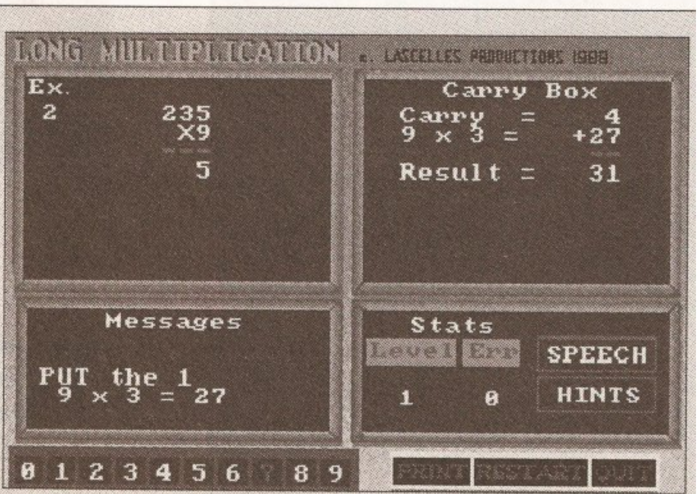
The pack consists of two disks and a very slim manual. On the disks are programs to help spelling (wonder why they dropped that one in?), a tables test and long multiplication, division and addition.

Each program is loaded by clicking from the Workbench and all follow a similar style, on-screen instructions supplemented by the use of the Amiga's speech program. The speech may be turned off at will – I'd recommend you do so. All the programs are valuable in the material they cover, but both their presentation and the user controls are subtly awkward. For instance the long multiplication section presents a sum on screen but instead of typing the answers for each line, you must watch a demonstration/tuition section, then enter all the digits from right to left. Not only that, for a package aimed at older as well as younger children, all digit entering must be done using the mouse and a list of numbers – no keyboard.

While undoubtedly of a high educational standard the package totally fails to grab and trips over itself in the process. Fine for devout masochists, but anyone else should avoid it. This is precisely the type of program kids have no patience with after a hard day at school, educationally sound though it may be. AS



***Maths Adventure*: it seems impossible, but you can have fun with maths**



***Back to Basics*: brushing up on your maths might leave you confused**

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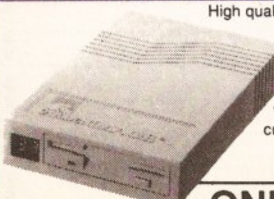
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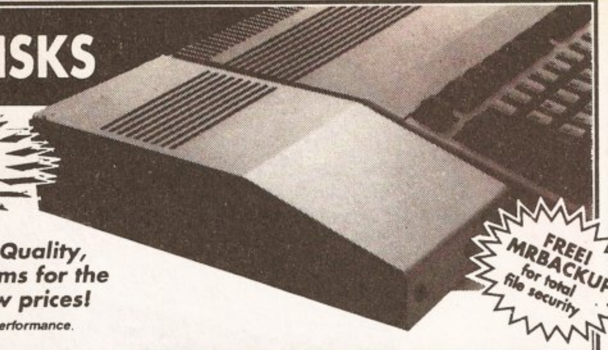
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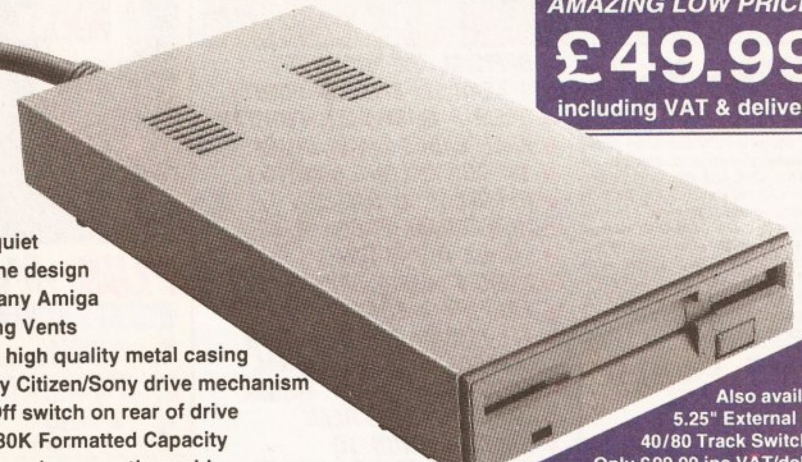
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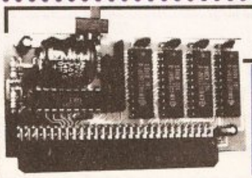
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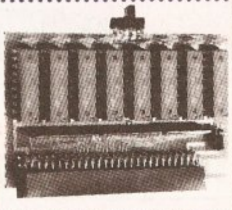
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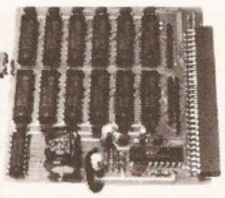


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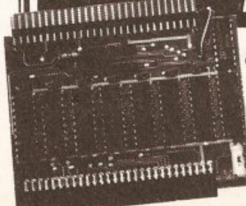


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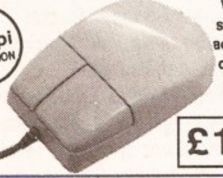


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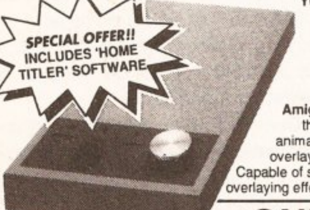
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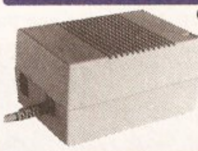
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Cliff's Code Conundrum

Presenting another problem for your enquiring minds, plus the winner of the Fractal Competition

Welcome, my friends, welcome to another conundrum column. In this month's instalment, which, If I may say so, is particularly enticing and darkly mysterious in a bottle of murky red wine sort of way, I have the next seemingly demure problem. But we all know that below its surface lies the fire of potential creation, the smithy in which, dare I say it, works of art may be forged and polished.

This time I'm looking for a program which will simulate a *Reverse Polish* notation calculator. Now, *Reverse Polish* notation may sound horribly frightening, but it is in fact very simple and elegant and, furthermore, it makes the task of simulating a calculator so much easier. It works like this:

All entered numbers are held on a stack, which is simply a way of arranging data such that when you take an item from the stack it is always the last item that was placed on it. Think of it like a stack of dinner plates: you can only add plates to the top, and remove the top-most plate (unless you want to cause an accident, that is).

So, numbers are typed in, and when the [Return] key is hit they are sent to the stack. Whenever an operator is typed (such as +, =, / and so on), then the last two items on the stack are removed, the operation is performed on them, and the result is placed back on the stack. Supposing you wanted to add 3, 5 and 7 together:

User input	Output
3 [Return]	
5 [Return]	
+ [Return]	8
7 [Return]	
+ [Return]	15

You can see why it's known as 'Reverse' notation (I'm not entirely sure why it's described as Polish, mind you).

I'm not looking for a calculator with lots of flash functions, just the bare bones. Send your answers in on an AmigaDOS formatted disk, along with any relevant documentation, and enclose an SAE if you want it back. Solutions can be in any language, but do include source code it you've used a compiler or an assembler. The closing date for entries is 7 January. The prize is £50. May your fingers glide across the keyboard with the speed of Mercury.

THE FRACTAL COMPETITION

At last, the results of the *Amiga Shopper* fractal fight-out can be revealed. We were quite overwhelmed by the response – we received lots of excellent programs, many with features we wouldn't have imagined. Some of them even played fractal music!

The spread of languages used was good, too. There were entries in C, assembler, Amiga, GFA and HiSoft Basic, and AMOS.

Many people chose to include the Julia set as well as the Mandelbrot, which seems logical since the two equations are so similar. One or two entrants used clever algorithms for carrying out the plot. The most interesting of these was a 'recursive descent'. This works by dividing the screen into four boxes, and plotting the Mandelbrot points along the edges of these boxes. If the colour for a box is the same all along its outline, then it is assumed that the whole of the inside is also that colour, and it is plotted with a simple box fill. If the colour varies along the outline, then the box is divided in two and the process repeats itself. A considerable amount of time can be saved by using this method.

Another clever trick used by some is to start the plotting with extra large blocks, then repeat the plot with smaller and smaller blocks until the finished image is composed of individual pixels. Although this doesn't speed the process up, it does give the user a good chance to see what the thing is going to look like without waiting for the entire plot to finish.

HOW TO GET A COPY

Andrew's listing is far too long to publish here. Instead, he has kindly agreed to give a copy to interested readers who send him a disk, an SAE and a handling charge of £... His address is:

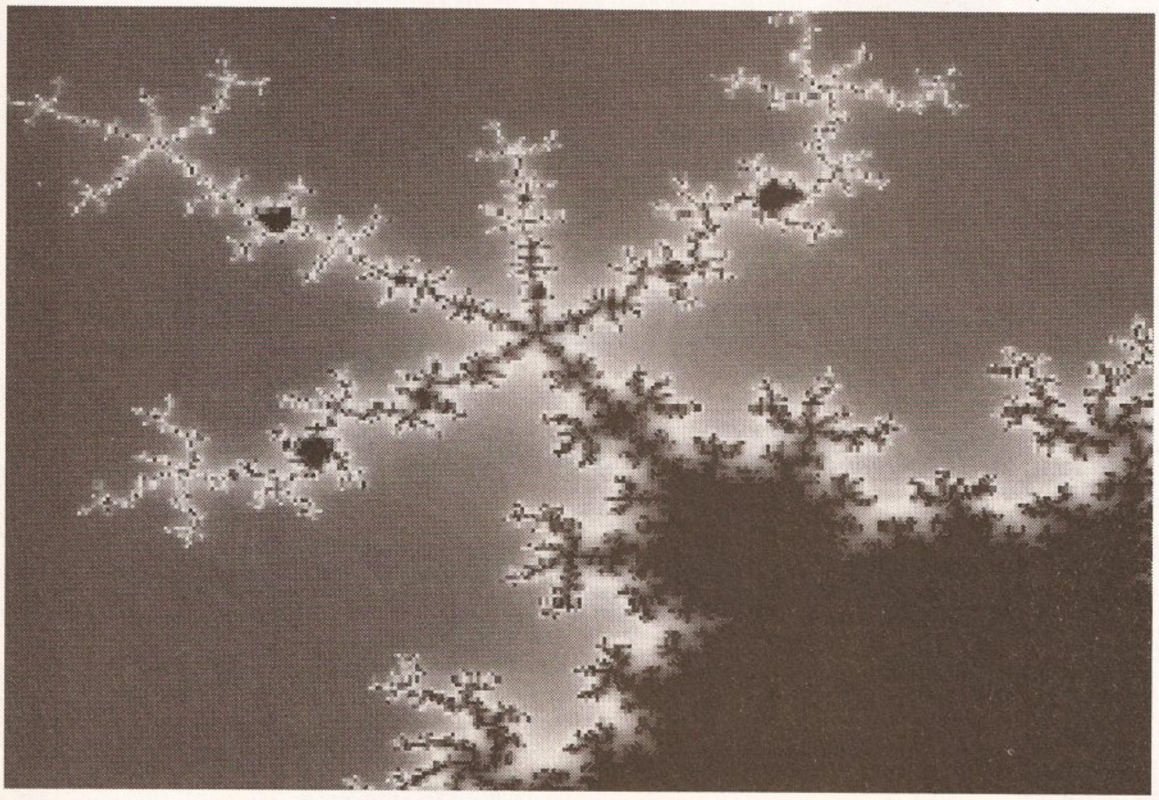
ANDREW TOWERS
The White House
133 East Lane
West Horsley
Leatherhead Surrey,
KT24 6LJ

After much deliberation and argument (my chin still hurts), we have made our decision. The winner of the *Amiga Shopper* Fractal Competition is Andrew Towers, of Leatherhead in Surrey.

Andrew's program was written in assembly language. It generates both Mandelbrot and Julia sets in a number of pixel sizes (useful for previewing), and enables the user to choose custom palettes via an elegant colour spreading menu. Results can be saved and loaded as IFF files. As well as providing a mouse-operated zoom facility, it is also possible to enter coordinates of interest as numbers.

Our winner has also included an optimisation to the basic Mandelbrot algorithm, whereby a point which loops within a limited range throughout the iterations is assumed to be within the set without the entire number of iterations having to be executed. Added flexibility is provided for by giving a choice of screen resolutions and a user-definable number of iterations. All in all, it is an excellent program – it's no slouch, either.

Finally, thanks and commiserations to all those who entered. Don't be deterred, there'll be plenty more Code Conundrums to get your teeth stuck into in the future. AS



And here's a close-up of the Western spiral arm of the Mandelbrot set, courtesy of Andrew's winning program.

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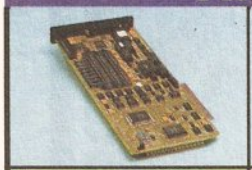
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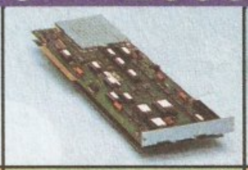


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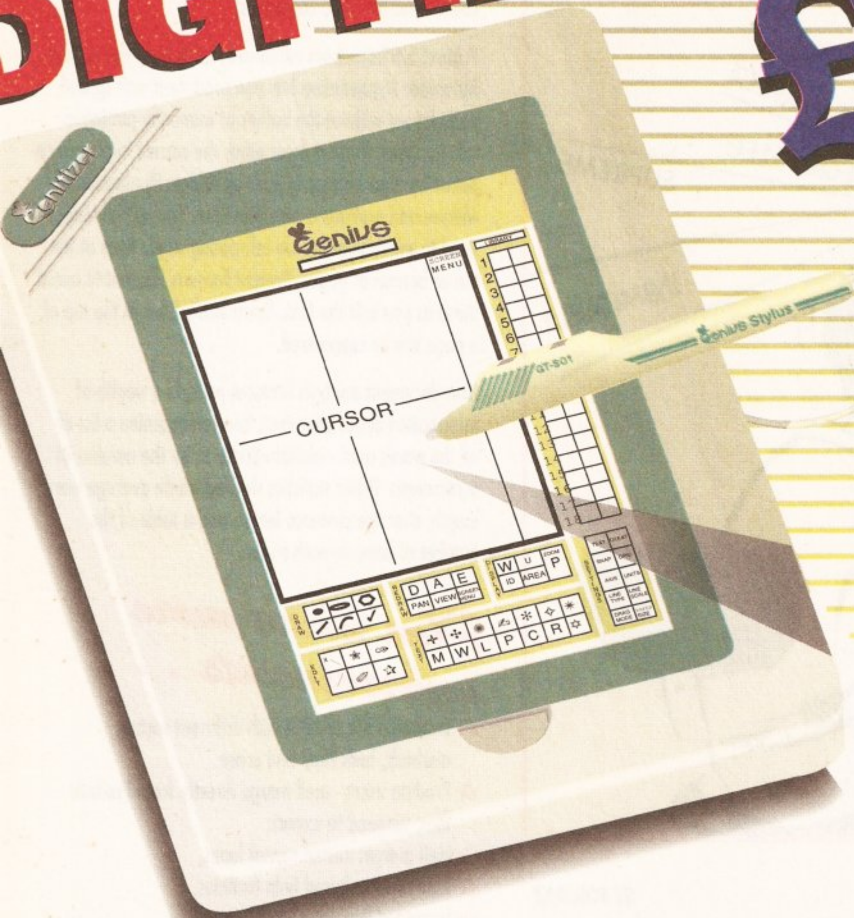
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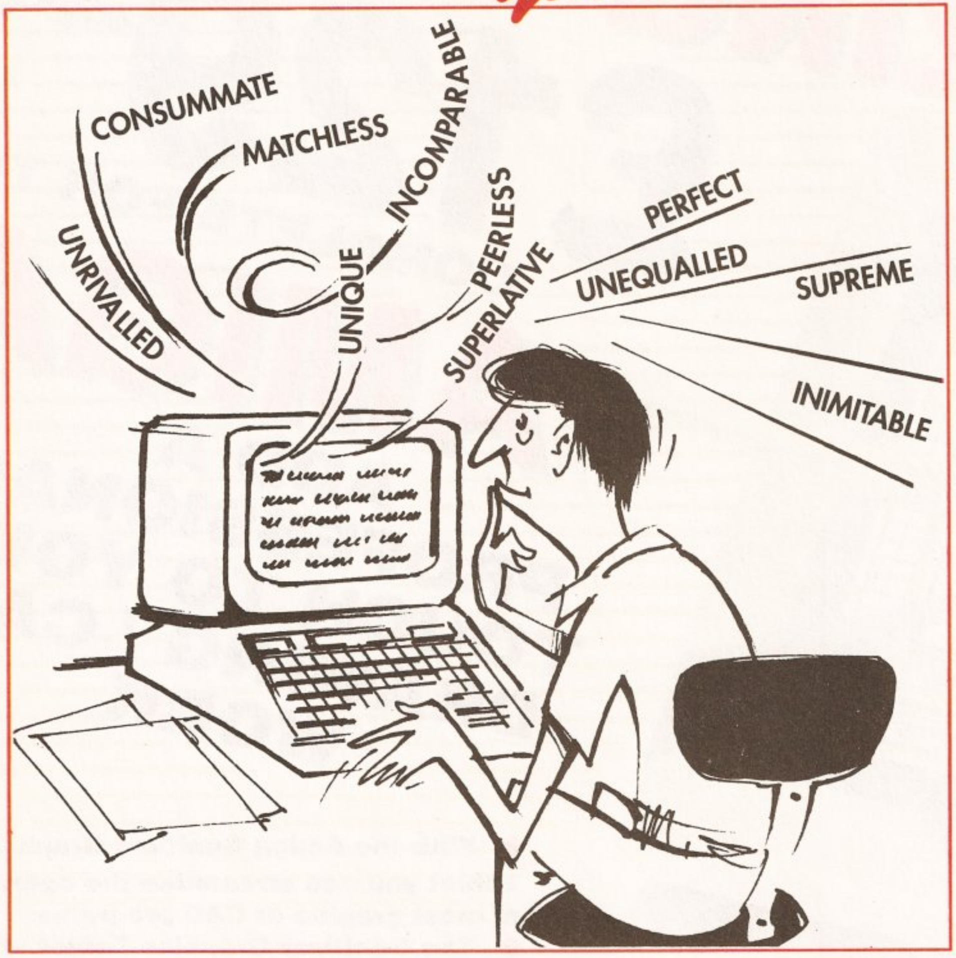
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Plus What?

The new A500 Plus: Could this be a machine for the 90s or a turkey for Christmas?



"We've all demanded and lusted after it – but was the grass just greener on Workbench 2's side of the fence? Let's see..."
Mark Smiddy

Even the most lackadaisical Amiga user cannot have failed to notice the explosion of interest in "the new" 500. Despite Commodore's best fforts to play down its arrival until ne official launch date (originally cheduled for early 1992) the nachine slipped out.

Due to publishing deadlines, we ould have reviewed the machine in ıst month's issue (yes, it was round that long ago) but decided to eave it until we had had time to get ɔ know the machine better; fools ısh in... Also, this being *Amiga Shopper,* the emphasis is away from ne immediate user mode of Vorkbench and more from a rogrammers angle. No matter how ice it looks, the machine must have more professional feel before large evelopers will take it seriously.

Visually there is little to identify ne new machine apart from two xtra keys (they have no effect in the JK) and a new badge. The two new eys take up extra keyboard real-state and so the right-hand shift key nd the return keys are a little maller but otherwise that's about it.

Internally the A500 Plus is omething else altogether. The board as been completely re-designed vith a full 1Mb RAM and a battery acked-up clock already fitted.

The famous trapdoor slot has een retained, but now accepts ither 512K or 1Mb expansion cards irectly. The up side of this means ne machine now supports 2Mb of Chip RAM (like the A3000) and can e expanded to 10Mb. The down ide means some existing trapdoor xpansions and the infamous KCS Power PC board cannot be fitted, but is only a matter of time before the levelopers catch up. (At a recent xhibition in Cologne, KCS predicted he new board would be ready before Christmas 1991, and would effectively behave like a 1Mb xpansion in Amiga mode.)

WORKBENCH AND NTUITION

ntuition is the Amiga's GUI – the graphics interface between you and he computer; and the most startling xample of the new Intuition is the Vorkbench itself. Workbench 2 is already a source of confusion for xisting users: is it all hype and 3D bas-relief, or something new?

Here it is in black and white: Vorkbench 2 is a complete new system in its own right and relies on he new Intuition to perform many of its more advanced functions. However, although most existing programs will work as normal, few will be able to take advantage of the extra features. At user level though, the new Workbench is a dream come true. Most of the new features are logical extensions of the existing system, while some functions, Delete for instance, have been moved to more logical places. Furthermore, all the main operations have keyboard short-cuts so you don't have to fiddle constantly with the mouse.

No less than five new gadgets have been added with this release, but unless stated otherwise, existing software will not be able to make use of them just yet:

- **Check box –** A gadget which toggles between two states – on and off. Displayed as a little box with a tick inside it.
- **Cyclic** – Cycles through a list of options one at a time. This gadget is used to keep the screen displays uncluttered yet it still displays a lot of information.
- **Depth Arrange** – Replaces the older (and confusing) "Push to Back" and "Bring to Front" gadgets of the 1.3 days in one simple button. This gadget is application independent.
- **Radio Button** – Used for selections where only one item in a group of two or more can be selected. Selecting a radio button de-selects the other.
- **Zoom Window** – Expands a window to fill the screen or compresses it into a small corner. This gadget is application independent.

DEPOSITS AND ICONS

Perhaps the most important invisible facility of Workbench 2 and the new Intuition is the new Deposit feature which enables you to manage Tool and Project icons much more efficiently than ever before. This facility is a new idea and programs have to be written to take it into account. (Technically speaking the deposit system is an extra Intuition/Workbench message. When an icon is dropped into a window, Workbench sends a message to the program that owns the window and asks it to load the named file.) Deposits have been implemented in the Workbench 2 version of IconEd. When the program starts, you can load icons as before or just drop them into the window. The technique is exactly like moving icons between drawer windows.

ProWrite 3.0, a good example of third-party software written with Workbench 2 in mind, supports a second type of deposit. When started on an A500 Plus, a small pseudo-icon (a deposit) appears on the Workbench. By flicking back to the Workbench screen, new files can be loaded by simply dropping their icons into the *ProWrite* deposit: just like moving a project icon on to a disk icon on Workbench 1.3 to copy it. This system is used because it is not legal to move Workbench icons into different screens. Double-clicking the deposit (like opening a disk) takes you straight back to *ProWrite.* The program also appends itself to Workbench 2's Tools menu so it can be selected directly from there.

The deposit system works well – but I can't help feeling it was something of a compromise to retain compatibility with the outdated Workbench 1.3 which has changed little since it was first devised. A better method has been employed by Apple's Macintosh for some time under its multi-tasking environment. Although Apple's Multi-Finder is not as sophisticated as Workbench in many respects, double-clicking a file icon starts its associated program. If the program is already running however, the file is loaded automatically. The same trick on an Amiga just starts another copy of the same program.

EVEN MORE FONTS

The Amiga has never been famous for its fonts. Even though the Adobe screen fonts, Times, Courier and Helvetica, improved matters they were still only available in a limited number of sizes. Also, coloured fonts (such as the Kara range) were not supported at all.

Thankfully, Commodore has addressed both those problems in Kickstart 2 – in addition to speeding up text display routines considerably. Colour fonts are now supported directly in most programs (except Shell windows) and a small range of Compugraphic Outline fonts (CG Times, LetterGothic and CG Triumvirate) provide access to an infinite variety of sizes.

The use of outline fonts and incorporation of the excellent font manager, *Fountain,* means you can obtain the styles you need from a variety of sources – even from PC suppliers. *Professional Page* users have been able to do this for some time now, but this opens doors for everyone else without going to the expense of buying a DTP package they neither want nor need. Outline fonts occupy far less disk space than discrete bitmapped versions, but take much longer to load. The *Fountain* program can be used to make bitmaps of commonly used sizes giving everyone a choice from the best of both worlds.

KICKSTART UPDATE

The greatest problem faced by developers the world over is: how upwardly compatible is software and hardware going to be with the new machine? The software at the heart of the A500 Plus, *Kickstart,* has been completely revised and updated to take advantage of the new hardware (see later) and now incorporates a number of the external libraries previously loaded from disk. Best news of all in this area is that Guru meditation has gone – to be replaced by an equally scary Software Failure request. However, the old Software Failure requester can now be hidden by suspending the offending task and effectively freeing you to carry on about your business.

More interestingly, the A500 Plus can be booted from any bootable device regardless of its normal priority. (Older machines could only boot from an internal drive and even 1.3 machines can only boot from that or a hard disk.) *Kickstart 2* has a special "Boot Menu" accessed by holding both mouse buttons after a

FEATURE CHECK • FEATURE CHECK • FEATURE CHECK

	A500	A500 Plus
Storage		
Floppy 3,5 880K	1 Internal	1 Internal
Hard disk	Optional 20Mb+	Optional 20Mb+
Graphics etc		
Palette colours	4096	4096
Workbench Text	80x30 and 60x30	80x30 and 60x30 plus others
Lowest resolution	320 x 200	320 x 200
Colours	16/32/64/4096	16/32/64/4096
Highest resolution	640 x 512 (1)	1280 x 512
Max colours	16	16
Sound		
Type	8-bit digital	8-bit digital
Volume	256 levels	256 levels
Range	9 octaves (stereo)	9 octaves (stereo)
General		
Workbench	1.3.2	2.04
DOS Supplied	AmigaDOS 1.3.2	AmigaDOS 2.04
OS Supplied	Kickstart 1.3	Kickstart 2
Processor	68000	68000
CPU Clock	7.14MHz	7.14MHz
Real time clock	Optional	Standard
Language supplied	AmigaBASIC	ARexx
Power		
External PSU	60W	60W

	A500	A500 Plus
Memory		
CHIP (MAX)	512K	1Mb (2Mb)
FAST (MAX)	0Mb (8.5Mb)	0Mb (8Mb)
Maximum RAM	9Mb	10 Mb
ROM	256K	512K
Expansion		
System bus	86 way edge	86 way edge
I/O		
Printer/Parallel	1 x Centronic	1 x Centronic
Printer/Serial	Yes (on RS232)	Yes (on RS232)
RS232	Standard	Standard
MIDI	Optional	Optional
Analogue RGB	Standard	Standard
Digital RGB(I)	Standard	Standard
Composite video	Standard	Standard
VGA RGB	No	Needs special lead
Analogue to digital	4 – shared with mouse/joystick	4 – shared with mouse/joystick
Light pen	Optional	Optional
Keyboard	94 key internal	96 key internal
Digital Joystick	Optional	Optional
Analogue Joystick	Optional	Optional
Mouse (200 DPI)	Supplied	Supplied
Audio out L&R	2 x phono female	2 x phono female
TV modulator	Standard (external)	Standard (external)
Price	about £399 w. pack	£399 w. pack

reset. This allows you to choose which disk drive or hard disk partition to boot from; and to enable or disable drives at will – so, out goes the need for anti-click and drive disable switches! You can even boot the machine from any partition but disable the startup-sequence – effectively dropping you straight into the Shell.

AMIGADOS ARRIVAL

The CLI is finally dead, laid to rest but not forgotten. Although the CLI program can still be invoked by older software (to retain compatibility) the window behaves just like a Shell. The new AmigaDOS is as far removed from the old version as the new Workbench and is now a pleasure to work with rather than a chore.

Many of the more commonly used commands are ROM resident – so there's less disk swapping. Those that aren't can now be made memory resident – including FORMAT and DISKDOCTOR. Also, the new console driver remembers up to a screen full of information – so if text scrolls off the top, you can get the last few lines back by re-sizing the window.

Several new commands have been added:

- BRU – Backup and Restore Utility. An AmigaDOSed version of the UNIX hard disk backup system.
- ConClip – Facilitates copying and pasting within console windows – ED, MORE, Shell and so on.

- CPU – Controls the 680x0 series processors. Not much use on the A500 Plus – unless you crowbar a 68030 in there. Checks the type of processor for use in script files.
- IPrefs – LookS after some of the intuition functions such as screen colours and resolution.
- MagTape – Driver for tape streamers.
- MakeLink – Creates logical links between files.
- Set – Handles local environmental variables including process numbers and error returns from commands.
- SetFont – Determines font size, type and style in console windows.

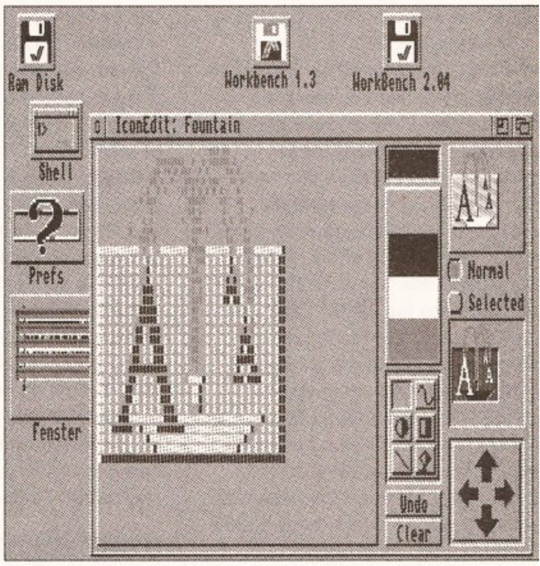
Finally, and remember this feature is just scratching the surface of AmigaDOS, there are two new wildcard characters, the most important of which is tilde (~) or NOT. This reverses the operation of a pattern viz:

```
DIR ~(#?.INFO)
```

means show everything except dot-info files.

THE NEW LIBRARIES

RAM-Handler, Disk-Validator, Shell-Seg and FastFileSystem drivers are now part of Kickstart, so any software which attempts to load them directly will fail. This (thankfully) should stop at least some of the nastier viruses for the time being – which must be a good thing. For the most part, this change should be transparent to existing software. The following libraries have been added to the new A500 to aid programmers. This may all seem a little removed for average users – but libraries are what make the Amiga tick and these new ones will help make professional software buzz.



Obtain the variety of styles you need with *Fountain*

ASL.library: The routines for the standard file requester and standard font requester. These are basically the bare bones of the old ARP library – most famous for Charlie Heath's file requester.

Commodities.library: A set of common routines used by the *Commodities Exchange* programs. These are also available for programmers who wish to use them.

IFFparse.library: A selection of routines to handle the devilishly complex IFF (interchange file format This is intended to help programme make more extensive use of IFF, an therefore, allow programs to exchange data more easily. (Just look at what IFF did for Amiga graphics programs!)

RexxSupport.library and RexxSys Lib.library: ARexx (an Amiga version of the Rexx language written by William Hawes) has replaced the

continued on page 1



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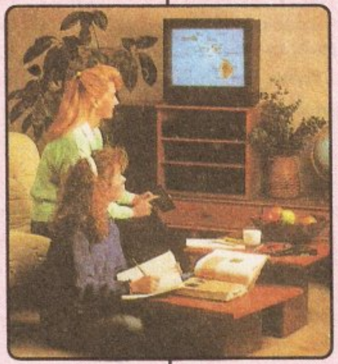
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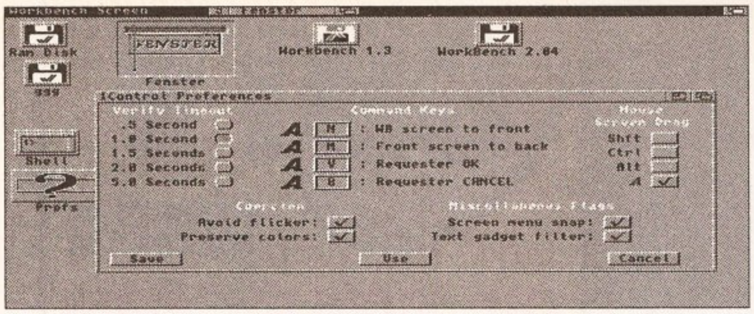
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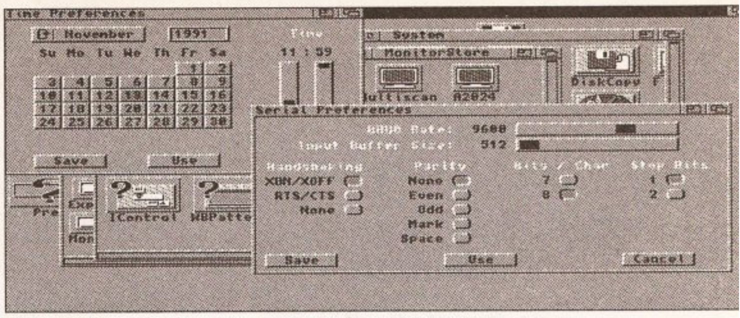
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Power to the people! Freedom of choice is the name of the game. In the IControl screen of Preferences, key shortcuts can be redefined



There's more to Preferences than a 3D look – this is the window used to set up the serial port parameters. Behind it is the long-awaited Time Editor

continued from page 140

ailing AmigaBASIC (yippee!) for Workbench 2. These libraries allow programs to communicate with ARexx at low level.

HARDWARE HEAVEN

There are no real surprises on the hardware front – except the replacement of Denise and Agnus chips and a complete new motherboard. This may sound impressive, but given the number of revisions the machine has had, this represents a revised, rather than redesigned, layout. It would have been rather nice to see at least a token gesture such as clock speed being doubled.

Cavils aside, the new machine is noticeably faster than the old one for most applications. Although it is not yet clear why this should be, it seems probable Commodore has improved and honed some processor intensive parts of *Kickstart*.

The new Agnus now supports up to 2Mb of Chip RAM – as found in the A3000 and the new Denise gives several extra screen modes – although special monitors are required to access many of them.

TV owners will still have to work in standard HiRes since the only new mode they can access – SuperHiRes (1280 x 256 in PAL) is a drag to read even on a reasonable monitor, such as the 1084S.

Interlaced screens still flicker unless you have a display enhancer and we are still waiting to see if existing A500 flicker fixing upgrades will work in the Plus. All the same, it is possible to define a screen which occupies a much bigger area than the display and to scroll around it with ease.

Two new modes are supported (new for the A500 at least) productivity (four colours in either 640 x 480 or 640 x 960) and A2024 (four colours at 1008 x 800). Productivity mode requires a multiscan monitor to work; while A2024 is a special mode for Commodore's own A2024 monochrome monitor. This provides four grey scales on an 8.5 x 11 inch display for CAD and DTP applications mainly. The screen refresh rate of A2024 is selectable between either a slow 15Hz or even slower 10Hz (normal UK PAL monitors refresh the screen at 50Hz). This might seem a little odd, but is quite sufficient for the intended applications.

One big disappointment is the palette. This is still fixed at the 4096 colours it had when the machine was introduced something like seven years ago. At the time that sort of power was almost unheard of – but now it has become commonplace to find thousands or even millions of colours on machines which cost less than £1500 (and that includes a monitor). Today's applications demand subtle colours for everything from art to CAD so this is one area which Commodore must address and they must do so quickly.

The same has to be said for the sound. Although the Amiga has always been capable of some of the best sound around it is still limited (?) to four channel stereo sound available over nine octaves. Although not as important for serious applications, Commodore will have to consider giving the machine at least eight channels and at least 12 or 16 bit sample playing capability.

TO SUM IT ALL UP

This must raise a lot of questions – especially for existing owners wishing to upgrade.

Ask yourself, do you really need the 2Mb of Chip memory and screen modes you will probably never use – at least for the forseeable future? Most of you do not really need those facilities especially since getting at them is likely to be a costly exercise. Some, like 2Mb Chip RAM practically impossible with the current 1.3 motherboards.

The software on the other hand is a completely different story. *Kickstart 2* is a not just a step forward for the Amiga – it is a gigantic leap ahead.

It is, however, fair to say that a lot of PD and Shareware programs (especially older ones) will not work with the new *Kickstart* – but, in any case, many of them merely add to facilities which are found there already. For instance, thanks to the new *Workbench*, file management programs should no longer be necessary.

The new *Kickstart* and Workbench are everything we could ever have wished for. They are something no serious Amiga user can afford to be without. AS

OPINION • OPINION • OPINION • OPINION • OPINION

In spite of Commodore UK's claims to the contrary, the A500 Plus is here to stay. As a Commodore developer, I found myself in an unenviable position when rumours of the new machine started to circulate – I knew of the machine's existence and impending launch but was subject to a non-disclosure agreement. Commodore remained tight-lipped on the subject and steadfastly refused to give anything out officially. So, in true tradition I cheated by going out and buying one.

But why was Commodore so reticent about giving anything away? For the answer you must consider the number of "older" 1.3 machines already piled high on dealer's shelves. Since the new machine features enhanced technology, why would anyone want to buy an old one? Cue panic.

Suddenly dealers and distributors across the country find themselves with outmoded stock and a war erupts as 1.3 Amigas get dumped at low prices. On the other side of the fence, users complain of incompatibility problems with the new machines. (Actually a more cynical observer might suggest most of the software works fine, it's the cracked, hacked and packed versions that don't, because the pirates' fancy loading screens et al crash the hardware.)

Let's rewind that a little. The predicted panic never happened. Most dealers are taking things in their stride – after the fiasco with the STE most will have learned valuable lessons, albeit at Atari's expense. Kickstart 1.3 machines are still selling at the old price (though for how long remains to be seen), incompatibility problems are slight and affect games in the main. Overall it looks like Commodore's worries were unfounded. However, if they'd got round to warning the UK developers and press sooner, the transition period would have been a whole lot simpler.

But there's an unspoken side to this story as Commodore finds itself with a new and more worrying conundrum – the mid-range (A1500 and B2000) machines are still fitted with the old *Kickstart*. In effect, Commodore now has its premier OS fitted to machines at each extreme of the range (A500 and A3000) and the outdated OS fitted to the entry-level professional models. Would you buy a professional system with what is perceived as a second-rate OS and outdated custom processors fitted? Taking that at face value, who would?

As I see it, the race is on for who will be the first major dealer to source and fit Workbench 2 upgrades along with the new custom chips to A1500 and B2000 machines. Although there has never been a great demand for these machines – sales of A500s outstrip that of the 1500/2000 models by something like 95 percent – the new Workbench alone could suddenly change that.

It may well be Commodore's decision to badge the B2000 as an A1500 – and aim it at a different market – or an attempt to shift old stocks of the 2000 motherboard before the hugely popular A500 units sold out. If that was the case (and it's only speculation) the ploy has failed. Sales of the A500 far exceeded all expectations and the new machine arrived long before forecast. This is good news for everybody, except perhaps those who got caught in the transitional phase and ended up with a Workbench 1.3 machine.

So, have Commodore got a machine for the nineties? I think it's too early to tell yet, although I am in no doubt the new Workbench, improved AmigaDOS and revised hardware can only be good for users. They are what has been needed for a very long time. Nevertheless, that is not an excuse for Commodore designers to sit on their backsides and wait around for everyone to overtake them again. I don't think they can afford to – but time will tell.

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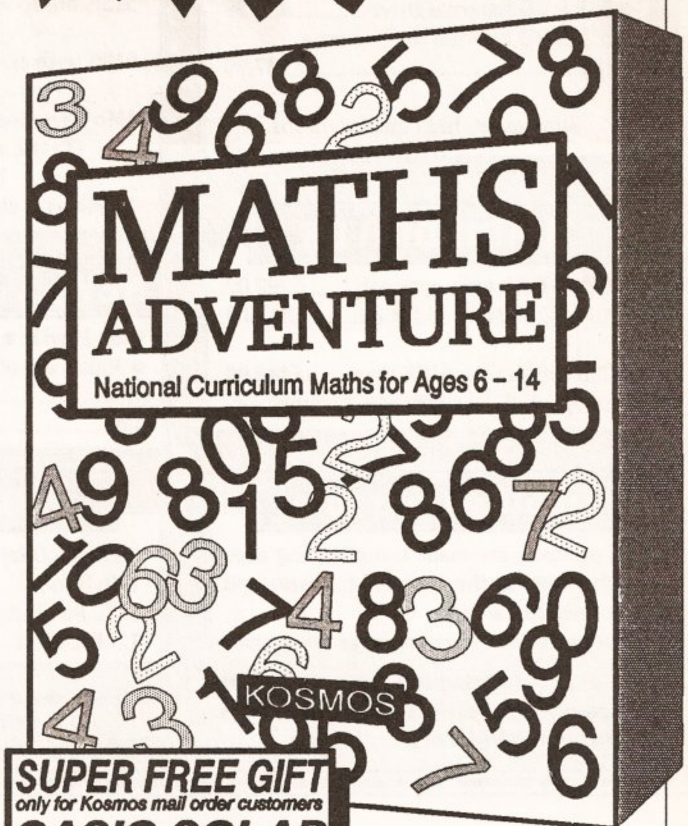
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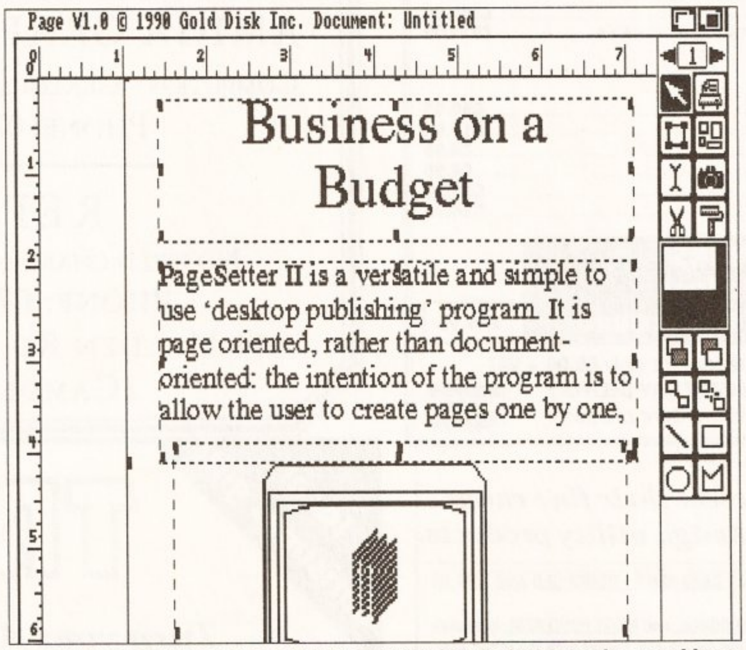
Business on a budget

Pat Winstanley introduces some serious software for the more impoverished masses



"Running a small business entails watching expenses carefully. Which software can help you without costing you more than it saves? Let's have a look...."

Pat Winstanley



You might not think so, but a desktop publishing package can be a real boon for a budding business – imagine the lovely brochures that can be produced!

The fact that you're reading this article implies that you want to save some money without missing out on the benefits serious software can bring home and small business users. Perhaps you are new to the Amiga and don't know what software is around at a decent price. Or maybe you're simply not sure what business software is, and what it can do for you. Either way, this series of articles will help match your requirements in software to your budget.

Magazines like *Amiga Shopper* are always on the lookout to review new, sophisticated packages. Unfortunately these packages tend to be pretty expensive. It's all very well enthusing about *Superbase 4* with all its bells and whistles, but if all you want is a simple name and address list you won't want to spend several hundred pounds for features which will never be used.

In many cases an old version of a program will do everything you need, and cost a lot less into the bargain. Many people never need more than a simple database and word processor but if the simple programs begin to prove restrictive, there's no need to worry. If you haven't paid too much for the software in the first place it is no great loss to put it away on the shelf and buy a fancier version.

In this series we will be looking at programs which you can pick up for about £50 or less, not much more than the price of a game which may only last a month or two before being forgotten forever. Integrated packages may cost more overall, but the individual modules are inexpensive when the package price is divided between them.

WORD PROCESSORS

Probably the first serious program anyone uses is a word processor, whether to write a chatty letter to a friend or a begging one to the bank manager. Word processors are often likened to intelligent typewriters, but a better description would be forgiving rather than intelligent. No need for bottles of correction fluid with a word processor – simply type away then go back through the text, changing words around, adding and deleting sentences and correcting spelling. Once happy with the result, simply print it out. Word processors now have many features to make the typist's life easier. Some are virtually essential for everyone while other features might be used by only a handful of operators.

Essential features:

❶ Word Wrap – allows the user to continue typing past the end of the line. When the end of the line is reached, the program automatically drops the following text on to the next line down. Ideal for hunt-and-peck typists who need to watch the keyboard, not the screen, while typing.

❷ Load and Save ASCII – most word processors save text in their own peculiar format with control codes only they can recognise. ASCII is a standard 'clean' format recognisable by virtually every word processor on every computer. It is extremely beneficial to be able to be able to pass text files between word processors, databases, spread-sheets and other machines.

❸ Spell Checker – the nature of word processors encourages fast typing since mistakes are easy to correct later at leisure, but checking the text on screen can be a bind and printing proof copies of longer documents merely wastes paper and money. A spell checker will go through the text, matching your words to its dictionary and highlighting those it doesn't recognise. Watch out though for words spelt correctly in the wrong context such as 'there' and 'their' or 'compliment' and 'complement'. Spell checkers don't have a clue what you're writing about and won't pick those up.

❹ Block Operations – once a document is typed, a read through it often suggests that whole sentences or paragraphs would work better in a different order. The possibility of marking sections of text and juggling them around is extremely useful, allowing creative writing to take place with the flow and the sorting and tidying to be done later.

❺ Mail Merge – see databases.

DATABASE DILEMMA

An address book is essential to every individual who wants to keep track of friends and relatives. A database is effectively an electronic address book, although it can be used for many other purposes such as holding details of book or record collections, recipes and diets or perhaps the form of a favourite horse or football team. At its heart, a database is a collection of records rather like a box of cards. Each record contains details of a particular item and can be shuffled in any order, some records taken out for use and the whole lot sorted in any way you choose.

Essential features:

❶ Variable Field Length – a field is one section in a record like a phone number. But different fields need more or less space. Thus an address would need more space than a phone number. Most cheaper databases save the structure of the database to disk, taking up the whole length of the field whether or not it contains an entry. If every field is set to 20 characters, and most only use four or five, a lot of memory and disk space is wasted.

❷ Conditional Searching – the whole point of a database is to retrieve information quickly and easily. If you have a database set up for your book collection and want to find all the titles by a particular author you won't want to work through the whole collection. Conditional searching allows you to select only those records which are

continued on page 147

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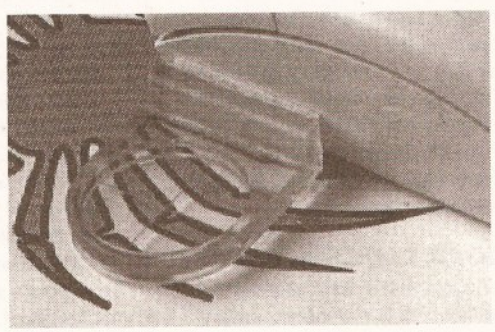
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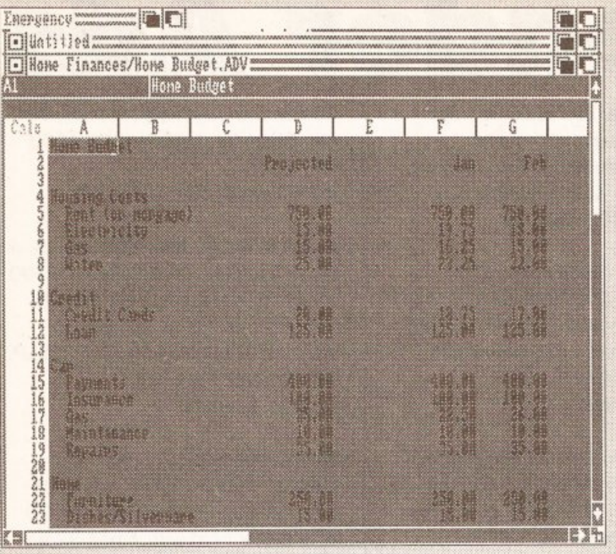
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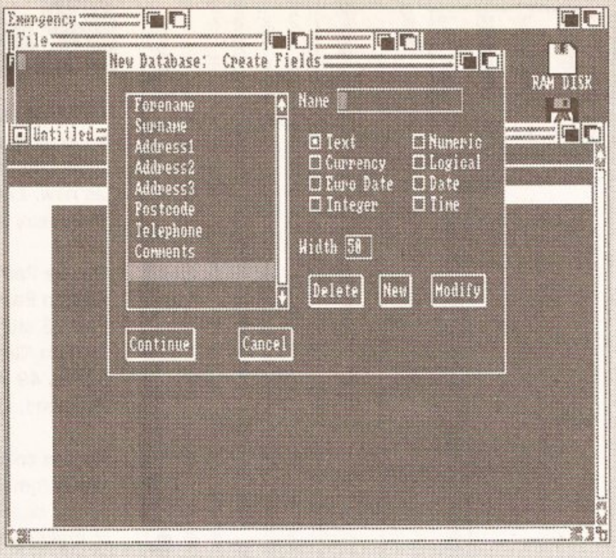


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On the left – *OfficeCalc*, part of the *Gold Disk Office* package. Text, numbers and formulae can be placed in any cell of the spreadsheet grid, tabulated and manipulated with ease

On the right – *OfficeFile*, a simple database, also part of *Gold Disk Office*. Information, such as name, address and favourite colour, is stored according to category. It can be retrieved by user-specified searches – asking for all people living in London, for example

ontinued from page 145

ertinent to your needs at a articular time.

3 Mail Merge – at times such as noving house you want to be able to nform all your friends and relatives f your new address. Mail merge nakes this simple. A database with his facility will enable you to grab all he names and addresses from a file nd pass them to your word rocessor. The relevant details can hen be inserted in a standard letter nd address label printed for all he recipients.

4 Record Editing – some simple latabases only allow data to be edited (for spelling and so on) at nitial entry – what happens when letails change? A change of name or hone number can then mean wiping he whole record and re-entering it rom scratch.

5 Save and Load ASCII – see word rocessors.

SPREADSHEET SOLUTION

Most home users will have little need or a spreadsheet, but it can be a handy tool for budgeting household ncome and expenditure. Spreadsheets are very good at 'what f' calculations. What if I work overtime for the next few months? Will I be able to repay that high interest loan faster? What if the mortgage rate falls by a percentage point? What if I agree to pay off my arrears at this or that amount per month? Will I be able to do so? Those are just a few examples specific to both home and small business use.

Essential features:

1 Auto and Manual Recalculation – changing one value in a spreadsheet often affects others too. Auto recalculation will check the whole of the data, making any necessary changes, but it's slow. With a manual option you can force a recalculation of only the affected section of the data.

2 Sectional Printing – spreadsheets live up to their name... they spread across as well as down the page. It is extremely useful therefore to be able to print out in sections which can then be reassembled like a jigsaw.

3 Save and Load ASCII – see word processors

4 Block Operations – see word processors

DESK TOP PUBLISHING

Word processors are useful, but the output can be a little boring. What if you fancy producing something which combines words and pictures, perhaps a newsletter or flyer for your local club? DTP is the answer. Although simple to do, a good deal of work is needed to learn the ins and outs of DTP programs. Each has its own good and bad points, and different people will find different packages suit their needs best.

Essential features:

1 Variety of Picture Imports – there's nothing more frustrating than trying to import a graphic which happens to be in the wrong format simply because it comes from the wrong machine or paint package.

2 Save and Load ASCII – see word processors

3 Text Flow Round Graphics – not exactly essential since text can be laid out either above or below graphics to give good results, but why not go the whole hog?

4 Picture Cropping and Resizing – you've typed up the text and don't want to change anything... but the picture is a bit too big and pushes the words off the page. So make the picture smaller overall or crop it to bring out the subject then resize it.

FINANCE FACILITIES

These days it seems everyone has several bank, building society and credit card accounts. The old days of cash-on-the-nail for everything has all but disappeared, and financial life is far more complicated as a result. A home accounting program can help you find your way through the financial jungle although entering and checking the data can easily take longer than the time-honoured method of jotted calculations on the backs of (easily mislaid) envelopes.

Essential features:

1 Reconciliation – you know how it is when your bank statement suggests you have several hundred pounds available while your cheque book tells another story. Make sure the accounting program you choose can figure out the individual items which make up the difference between your balance and the bank's.

2 Standing Orders – the last thing you need when using the Amiga to save time is to have to enter standing orders and direct debits month by month. This method of payment is supposed to save time, so make sure the program can be told once and for all what to do, then apply the information automatically.

3 Budgets – it's extremely useful to be able to work out what you 'think' you will receive and spend, then compare it to what has actually happened. Just don't let the spouse see how you dipped badly into the red buying that hard disk.

ALL BUNDLED UP

When setting up with serious software there are two main routes. Either you can buy all the individual programs as and when you think you need them or you can simply buy a bundle. Bundles are ideal for experiment since they often work out cheaper than buying the programs they contain separately. However if you don't and are never likely to have use for a large proportion of the individual items they contain, they are something of a false economy.

Additionally some bundles contain software which, even for the beginner, is frankly not worth the effort of loading. Next month we'll be looking in detail at some bundles – what they contain and their good and bad points. For now simply bear in mind that for you they might not be the wonderful value they seem.

A few examples of bundles are:

- *Gold Disk Office*
Spreadsheet, graphics, database, word processor and layout software.
- *The Works! Platinum Edition*
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☎ Jean 0603 (Norwich) 867005

Professional Page 1.3 £80 Version 2 £120 deluxe paint 3 and Photon paint 2 together £30
☎ 071 239 4756 Ray (daytime)

Amiga A1500 base machine only. 3 months old. Still under warranty. Comes with keyboard, mouse, CPU, etc. Great for upgrade from A500 only £550.
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Kawai KI Synth, over 256 sounds o[n] cards and disk. Plus Roland PC100 controller keyboard, both Immac. condition. Manuals, leads and boxes. £275. Kindwords V.2.0 W.P. £25 Contact Paul Cox
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B2000, Twin Floppy's Autobout 52meg. H/disk, RAM Expansion Board 2 meg fitted, CBNM 68030 accelerator card with 4meg 32 bit RAM Flicker Fixer. Multisync Monitor £200 ono
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A500 Plus 2.0 1.5 Meg 1 mth. old. yr guarantee Star LC10. Philips CM8833, Cumana Disk Drive. Box o[f] PD. Lots of mags. Mouse mat. Dust cover. Offers welcome. John Whyte, 96 Kemp Street Fleetwood Lancs. FY7 6DY

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Issue 9

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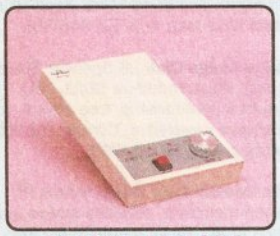
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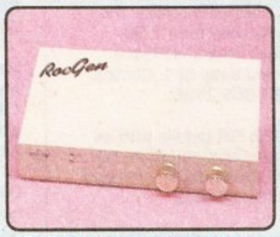
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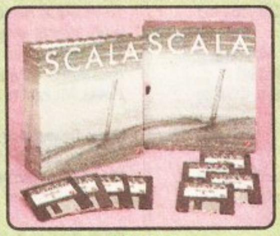
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SCALA

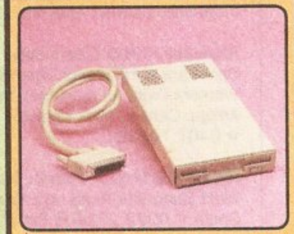
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Which computer(s), if any, do you own? 67

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Find your local group

1520 Plotter Group (ICPUG) Contact John Bentley ☎ 06286 65932.

Amiga Artists Club 34 Roundhay Mount, Leeds LS8 4DW. A club for Amiga artists, musicians and coders for mutual assistance and programming demos. No pirates, genuine Amiga artists only. Membership is free, contact KAM ☎ 0532 493942, 5pm-8pm.

Amiga Beginners' Club 110 Whitehill Park, Limavidy, Co. Londonderry, BT49 0QG. A club to help newcomers to the Amiga. There is a bi-monthly club disk, and a small PD library. Membership costs £2 for a single disk, or £20 for every issue.

Amiga Musicians' Club Membership gets you a disk with 50 IFF samples a month for 12 months. Also sample service. Membership £30. Contact Gavin Wylie, Guthrie Street, Carnoustie, Angus.

Amiga Users' Klub, Windsor House, 19 Castle Street, Bodmin, Cornwall PL31 2DX. Meets every Friday from 6.30-9pm, to expand members' knowledge of Amiga computing and to help solve people's problems. Contact Jack Talling.

Amiga Video Producers Group Meets quarterly in Swindon. For Info Pack send large SAE to Jim Strutton, 8 Rochford Close, Grange Park, Swindon, Wilts SN5 6AB. ☎ 0793 870667

Amiga Witham Users' Group 85 Highfields Rd, Witham, Essex CM8 1LW. Distributes tips and Basic programs. Keith Anderson ☎ 0376 518271.

Amigaholics Club For beginners and some experts. Free membership. Own disk magazine. Contact Kevin Bryan ☎ 071-580 2000 Ext 240 or write to 29 Wolfe Crescent, Charlton, London SE7 8TS.

If your group isn't mentioned, fill in the form at the bottom of the page to let us know about you

AMOS Programmers' Exchange Swapping of AMOS programmers' computer programs. Free help for beginners. Membership £5. Contact James Lanng ☎ 0629 825120.

AMOS User Group Swap ideas, help on any AMOS subject, swap PD and own creations. Contact Andy ☎ 0323 26790

Anglesey ICPUG Meets every Monday 6pm-9pm at Holyhead Unemployed Workers Club. All machines from C64 to Amiga. Contact Nick Massey ☎ 0407 765221.

Ayr ICPUG Meets at Radix Training Centre, West Sanquhar Road, Ayr. Contact John Smith ☎ 0292 261408 Ext 202.

Basic Programmers' Group 68 Queen Elizabeth Drive, Normanton, West Yorkshire WF6 1JF. Set up to encourage the use of Basic, exchange ideas and assist beginners to the language. Free newsletter from Mark Blackall ☎ 0924 892106.

Bury St. Edmunds ICPUG Contact Alan Morris ☎ 0359 51446.

Buxton ICPUG Contact Peter Richardson ☎ 0298 23644.

CanDo User Group If you are interested in helping start one to swap applications, hints, via disk, newsletter and occasional meetings send an SAE to John Ransley, 3 Berry Close, Telscombe Cliffs, Peacehaven, E Sussex BN10 7DW.

Chester-le-Street 16-Bit Computer Club Conference Room 2, The Civic Centre, Newcastle Road, Chester-le-Street. The club meets every Monday from 7.30-9.30pm to see each others' software, exchange advice and swap tips. Contact Peter Mears ☎ 091-365 2939.

Chic Computer Club Full details with an SAE to STAMP, Chic Computer Club, PO Box 121, Gerrards Cross, Bucks. Contact Steve Winter ☎ 0753 884473

Club Amiga 5 Bowes Lea, Shiney Row, Houghton Le Spring, Tyne and Wear DH4 4PP. Membership costs £15 a year for a disk magazine, PD software and a 24-hour telephone helpline service (091-385 2627). For more information send an SAE to Chris Longley.

Comp-U-Pal Australian user group for users in the outback. Newsletter, phone help line, PD library. Membership A$24. Write to Comp-U-Pal, c/o MDA, PO Box 29, Knoxfield 3180, Victoria.

Computer Club 16 Laton Road, Hastings, East Sussex ☎ 0424 421480. This is a 16-bit club dedicated to being computer enthusiasts without being pirates. Membership costs £15 per year, and the club has discounts with several local firms.

Coventry ICPUG Meets on the first Wednesday of the month. Bring your computers. Contact John Orange ☎ 0203 689635.

Disabled Group (ICPUG) Contact David Bate, 71 Bedford Road, Bootle, Merseyside L20 7DN.

Dublin ICPUG Meets fortnightly on Fridays (except August) at St. Andrews College. Covers all Eire, 36-page newsletter. Discounts arranged. Contact Geoffrey Reeves ☎ 010 353 12 883863.

Dundee ICPUG A new group which hopes to meet at Bits and Bytes, 21b Commercial Street, Dundee. Contact Dave Thornton ☎ 0382 505427.

Edinburgh Amiga Group Membership £5, includes free advice and PD. Contact Neil McRea, 37 Kingsknowe Road North, Edinburgh EH14 2DE with SAE.

Edinburgh ICPUG Contact Martin Lowe, Amiga Centre Scotland ☎ 031-557 4242.

Hereford Amiga Group Membership free, includes help for beginners and exchanging PD. Contact John MacDonald, Alma Cottage, Allensmore, Hereford HR2 9AT. ☎ 0981 21414.

Imagine Users' Group To encourage use of Imagine and other ray tracers. Affiliated to US group. Object library. Membership free. Contact Brian Walker, 16 Cambridge Road, Newton Cambridge CB2 5PL.

Independent Commodore Products Users' Group Biggin Hill Library, Church Road, Biggin Hill, Kent. Meets most Thursdays from 7.45-9.45pm. There are lecture nights and open nights where members can get help. See also regional entries. Contact John Bickerstaff after 8.30pm ☎ 081-651 5436.

Macclesfield ICPUG Meets at The Harlequin Club, Chestergate, Macclesfield, every Tuesday from 8-11pm. Contact Peter Richardson ☎ 0298 23644.

Mid-Thames ICPUG Meets at Cox Green Community Centre, SW of Maidenhead, on the second Thursday of the month at 7.30. Open nights and some talks. Newsletter. Contact Mike Hatt ☎ 0753 645728.

Pennine Amiga Club 26 Spencer Street, Keighley, West Yorkshire BD21 2BU. Offers free membership, free advice, and circulates a newsletter. Contact Neville Armstrong ☎ 0535 609263.

Public Domain User Group Swaps PD between members, provides advice and reviews of PD. Basic membership free, advanced £3 per year for newsletters and price reductions. SAE to 12 Oxford Road, Guildford, Surrey GU1 3RP.

Slim Agnus 115 Brocks Drive, North Cheam, Sutton, Surrey SM3 9UW. Meets on the last Thursday of the month. PD library, bulletin board, advice from Amiga experts. Contact Philip Worrel.

Software Exchange Service 13 Bournville Lane, Stirchley, Birmingham, West Midlands B30 2JY. Offers a forum for exchanging old, unwanted games for a small price. Contact Michael Pun ☎ 021-459 7576.

Solent ICPUG Meets at GEC Aerospace Sports and Social Club, Titchfield, Hants, first Tuesday of the month at 7.30. Open nights and some talks. Contact Anthony Dimmer ☎ 0705 254969.

South West ICPUG Meets second Sunday of the month at Queens Arms Hotel, Charmouth, Dorset, at 10am. Bring your computers. Some talks. Contact Peter Miles ☎ 0297 60339.

Stevenage ICPUG Meets at Hertford Road Community Centre, Stevenage, last Friday of the month at 7.30pm. Contact Bob Grainger ☎ 0438 727925.

Watford ICPUG Long-standing friendly club. Meets third Wednesday of the month, 7.30pm St Thomas Church Hall, Watford. Membership £12. Contact Rod Eva/Mark Pryor ☎ 0923 50161.

West Riding ICPUG Meets at the White Horse Inn, Fall Lane, East Ardsley, Wakefield, first and third Tuesdays at 7pm. Open nights. Minibus to London shows. Contact Kevin Morton ☎ 0532 537318.

Wigan ICPUG Contact Brian Caswell ☎ 0942 213402.

Wrexham District Computer Club PD, library of books, equipment loan. 10p to join, plus 50p to get in. Held in Memorial Hall, Wrexham every Thursday, 7-10pm. Contact Paul Evans, 3 Ffordd Elfed, Rhosnesi, Wrexham, Clwyd LL12 7LU.

GET YOURSELF LISTED

If you run a user group which isn't listed on this page, fill in the form below for your free entry. Send it to *Amiga Shopper* User Groups List, 30 Monmouth Street, Bath BA1 2BW. We reserve the right to refuse entries.

AS9

Group name ....

Contact name ....

Contact telephone number ....

Contact address ....

....

....

Place of meetings ....

....

Time of meetings ....

Type of activities ....

....

....

Membership fee ....

The lowdown on no-cost software

Jason Holborn searches the UK's PD libraries for the latest and greatest in utilities for the serious Amiga user.

I've been a fanatical fan of Amiga PD for years now, during which time I've seen some real gems and – of course – a few real donkeys. As a contributing editor on *Amiga Shopper*'s sister magazine *Public Domain*, I like to think I can sort the wheat from the chaff.

Jason Holborn

Sorting through the seemingly endless piles of PD that come my way can be an enlightening experience at times. Just when you think you're about to explode with frustration as the umpteenth scrolly demo pops up on to your screen, you find a real gem of a program that makes all that frustration worthwhile.

On the whole, the quality of Amiga PD software has improved beyond recognition in little more than a year. These days you'll find a seemingly endless supply of genuinely useful utilities, playable games and some really stonking demos just waiting for your attention. Anyway, without further ado, let's get down to the serious business of checking out the best that the Amiga PD libraries have to offer.

UTILITIES

FISH DISK 494

George Thompson Services

It's very unusual to find a PD disk that is completely packed with utilities which are all either useful or interesting, but that's exactly what we have here in the shape of *Fish Disk 494*. Containing a total of 8 utilities, this disk should be at the top of your shopping list.

AmigaBASIC programmers will love *Bref*, a powerful and surprisingly easy to use cross-referencing utility which will make the task of debugging your programs so much easier. Unlike previous attempts at an AmigaBasic cross-referencing program, *Bref* is completely Intuition-based, so there's no mucking around with complicated command line parameters which are easy to forget.

All you have to do is to feed *Bref* some source code and it will output a cross-referenced listing of the code (to disk or printer), complete with line numbers, plus a table containing all the variables and labels used in the code and where they were used. This is actually version 2.0 of *Bref* and Intuition support is the main addition.

All you left-handed Amiga owners will love *ButExchange*, a clever input handler which reverses the effect of the two Amiga mouse buttons so that pressing the left mouse button is the same as pressing the right and vice versa. Limited in appeal, it may be, but a real godsend to left-handed users.

One of the most interesting utilities on the disk is *DeafLab 1*, a utility designed to allow Amiga owners to communicate with deaf people via sign language. Simply by feeding the program a text file, it translates the text into sign language which is displayed on the screen by a clever pixelised hand.

Yet another input handler on *Disk 494* is *InputLock* by Preben Nielsen. It installs an input handler which enables you to lock the keyboard and mouse by pressing a few buttons. If you've got young children or even inquisitive pets which like fiddling with your Amiga, *InputLock* is a real boon.

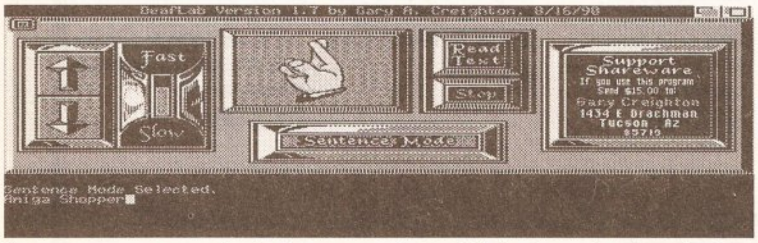
Another Preben Nielson utility is *PicSaver*, an absolutely brilliant screen grabbing utility which runs under hot keys. The program can grab whole screens, single windows and even rectangular regions of any screen simply by pressing the appropriate keys. I've had this utility installed on my hard disk for a few months now, during which time I've used it to grab all the screens for magazines such as *Amiga Shopper*.

Preben does it again! His latest program is *PWKeys*, an input handler which allows you to manipulate windows and screens by pressing keys on the Amiga keyboard. Other features include a mouse blanker, screen blanker, mouse acceleration, a Sun-style mouse (activates windows automatically when the mouse pointer is moved over them) and keyboard/mouse locking (same as *InputLock*). A powerful *SetKey*-style utility is also included which allows you to set up your own key definitions.

Programmers will love *StackWatch*, a utility which monitors the stack of any selected task thirty times a second and reports the allocated stack, maximum stack and current stack size.

Last, but not least, we have *vScreen*, a powerful utility which allows you to create virtual screens that are much larger than the actual display area of your monitor. These

continued on page 15



Now you can use your Amiga to communicate with deaf people using signing language. *DeafLab* translates on-screen using a pixelised hand.

BEGINNERS START HERE

Software for free?

This may sound like a call to piracy, but public domain software is free to anyone. There isn't any catch, unless you count the fact that there is so much PD software on offer that it's hard to choose what you're going to have.

But what does PD mean?

The public domain concept is borrowed from the early days of mainframe systems, where enthusiasts (called 'hackers' then, before the word had less pleasant connotations) produced programs and distributed them to their friends and fellow hackish types, asking for no payment but the glow of being recognised as a truly hackish coder. The copyright was waived by the author, and so the program was said to be in the public domain – that is to say, any member of the public had a right to copy and use the program however they wished, provided that the author's credit and any relevant documentation was distributed with the program.

So how can I get hold of all this wonderful free PD?

Either buy it from a PD library or, if you've got a modem, download it from a bulletin board. These are computers with modems, which anyone can use a phone and modem to log on to, download a lot of demos and utilities, leave a few messages and programs of their own and log off. You'll find that there are many bulletin boards with Amiga files available for download.

CUT, TICK & POST.....CUT, TICK & POST

Credit Card Hotline (0702) 466933

PD Soft (AS9) 1 Bryant, Southend-on-Sea, ESSEX, SS1 2YD.

VARIOUS UTILITIES

❑ **V016 FISH TANK SIMULATOR** A program that simulates an aquarium. Visually pleasing.
❑ **V023 APPOINTMENT CALENDAR : NAG** An Electronic appointment calendar for the Amiga
❑ **V024 BANKN** Will allow you to keep track of your bank account(s) in perfect balance.
❑ **V028 SPELLCHECKER** Current glossary contains over 9,000 words. more words can be added.
❑ **V029 HOUSE HOLD INVENTORY** Means of maintaining all your House hold possessions.
❑ **V041 DPAINT ART** Conatins loads of pictures for you to mess around with.
❑ **V048 TV GRAPHICS,VIDEO GRAPHICS (8)** Packed with background screens for your video production. other utilities, Different types ofgraphic styles, peel - takes an IFF Picture peel down the screen, showfont & Loads more.
❑ **V086 VIDEO PRODUCTION (2)** Both disks are Packed with video & genlock utilities.
❑ **V090 PDS UTIL'S No 1 :** D-Copy, Music grabber, Slideshow maker & picture ripper.
❑ **V099 DPAINT ART II** Conatins loads of pictures for you to mess around with. The second disk
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❑ **V261 TEXTPLUS VERSION 3.0** This disk is not just an update butcompletly New Word processor.
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❑ **V267 FRACTALS V2.1** Fractal Generator that generates various different Styles of fractals.
❑ **V268 AMIGA VENTURE CREATOR : ADL** The Adventuedefinition Language program
❑ **V273 FRACTAL CONSTRUCTION SET** used to generate various fractals
❑ **V274 DICE C SYSTEM (2)** Dillons Inter-grated Enviroment system. V2.06.15
❑ **V276 DISKPRINT V2.7** Prints labels for 3.5 disks, Primarily for small PD Library
❑ **V277 FORTRAN -77** V1.3c Compiler, linker & run time support library. F470
❑ **V279 CROSSWORD CREATOR** A program that creates crosswords. UPDATED VERSION.
❑ **V280 BUDGET** A program to help with managing personal finances. V1.302
❑ **V284 MCAD PROGRAM** The Object Drawing Program for the Amiga.ie CAD
❑ **V285 EDUCATIONAL:TYPING TUTOR** A Simple tutor which measures speed.
❑ **V286 DKB RAY TRACING PROGRAM** New Tracer with excellent Effects (3)
❑ **V291 POSTSCRIPT INTERPRESTER V1.5** An excellent Post script Interpreter for the Amiga
❑ **V294 ED'S MED MUSIC MODULES** Theres various music modules an excellent.
❑ **V298 NORTH C V1.3 (2)** Unpacked Version of the best c programming program.
❑ **V301 EYE OF THE BEHOLDER HINT BOOK** Inc Maps, Strategy & Solution.
❑ **V304 CHAOS STRIKES BACK HINT BOOK** Inc Maps, Strategy & Solution.
❑ **V306 A-GENE V3.125** Lastest version of the Family Tree program. reviewed in CU Amiga.
❑ **V307 VIDEO TAPE DATABASE PRGRAM:** Catalogue all your video tapes on a database.
❑ **V311 JACK NICKIUS COURSE DISKS (5)** Various New courses for the Golf Game.
❑ **V318 PRO TRACKER V1.1B & SOUND TRACKER V2.6** The Lastest & best versions these's programs.
❑ **V323 ANALTICALC SPREAD SHEET (2)** At last a new version that works. Excellent disk.
❑ **V327 SOUND TRACKER CONVERTER** Converts music modules in executables.
❑ **V329 MESSY SID** Converts/Transfers Amiga Text to and from any IBM PC disks/Amiga.
❑ **V332 AMIGA PUNT PROGRAM** Horse racing prediction program for the amiga.
❑ **V333 KING JAMES VERSION OF THE BIBLE** Packed on four amiga disks **(4)**
❑ **V338 TRANSFORMER V3.3** This is the Latest version of the IBM Emulator disk.
❑ **V339 SPECTRUM EMULATOR DATA DISK** 1: Adventure Classics needs v216 or V443
❑ **V341 CLIP ART COLLECTION 2:** Eight more disks totaly packed with excellent clip art. **(8)**
❑ **V349 SID (V1.06)** Replaces the CLI command line & makes life every easy. recommended for all
❑ **V350 BUSINESS CARD MAKER** Design your own Business cards on the Amiga
❑ **V352 RADISH HOUSE MUSIC SAMLES III & EMF SAMPLES** More Sampled sounds **(2)**
❑ **V354 PDS UTLITIES No 13** Free Copy, removes protected games copy protection so that the user can installl them on his/her hard disk. VMK, Another new virus killer. Disk-Cat, Can creator your own disk catalogue. Scenery, creates some excellent fractal based land scapes. Nuke, Kills the Latest virus.
❑ **V358 GENESIS LANDSCAPE** Sculpt or mould any landscape fractal. various types (FF501)
❑ **V361 PDS UTIL'S:14** Music based collection this time, The latest mod convert program, The New Noise Player program, The Latest Multi Player program, which will play various modules not just one type. Some modules for most music programs, & new instruments.
❑ **V362 PLAYING MODULES COLLECTION** These's disks are very well presented. (3)
❑ **V366 600 BUSINESS LETTERS** There are over 600 Standard business letters on this disk. Can be used as they are or insert some parts into your own letters/text.
❑ **V375 (ST-53/60)** Terminator, Running Man & Predator Samples & sound Fx. **(8 Disks)**
❑ **V389 QUICKBENCH** Loads as workbech & your machine resets workbench reapears.

MORE UTILITIES

❑ **V390 DESK TOP PUBLISHING PROGRAM** The first amiga PD Desk Top Publishing program. Encludes various extra features over the old Word processor, Test Editor, Grapics editor & loads more.
❑ **V391 THE SUPER KILLERS:** This is the best virus killer disk to date kills over 194 virus and may be more, Includes Various excellent killers such as Boot X, can install loads of oot lock protections and more. Virus Checker V5.26 (Hard disk virus killer & good file checker).
❑ **V392 AMICASH** The best bankin program that I have ever used on the amiga. easy controlls.
❑ **V393 PDS UTL No 15:** Boot Games, The idea is to install one of two games onto your disks bootblocks. Brackout and Breaker, very simple to use. BootGen, Another booyt block program. BootPic, This program will install any IFF picture onto your disks bootblock, very easy to use. PaulCopy, Simple, quick and easy diskcopy program. ScreenJoeger, The idea is to load any picture or program and then reset your amiga, load this program and save the memory/picture as an IFF picture. Trainer Maker.
❑ **V394 CHEMESTETIC** is a program that draws molecules using the calotte model. This means that atoms are drawn as bowls. Using this model, even extremely dangerous molecules like dioxine
❑ **V395 UEDIT V2.6h** This is a shareware word processor editor with various learn modes, a command language, menu customization, hypertext, on line help, a teach mode, split windows, copy & paste, undo, features.
❑ **V396 PDS UTL No 16:** Dataeasy, Excellent database program which needs NO CLI knownage to use, nice menu driven system. LandScape, drawning program based around a landscape
❑ **V397 MANDELBROT ADVENTURE KIT** a nicely done mandelbrot generator with full source code (about 18,000 lines of C code). Includes some sample images along with the parameters used to generate them, and lots of built-in help screens.
❑ **V398 MED MUSIC MODULES No 2** Another collection of tunes for use with the med prog.
❑ **V399 PDS UTIL'S No 17** Stitchery is a patten program & **sMovie** a video production scroller.
❑ **V400 RAY TRACER CONSTRUCTION KIT** Anonther ray tracer for the amiga computer.
❑ **V401 WINDOWBENCH V1.0 (2)**his is an excellent Workbench replace an is styled in Amiga Workbench II form, RecomMended.
❑ **V403 AMOS UPDATE V1.32** The latest update for the program Amos.
❑ **V404 HAM RADIO** Various utilities for the Ham Radio user. Excellent utilities packed **(6)**
❑ **V410 PDS UTIL'S No 1: PRINTING UTILITIES** Various utilities for any printer user, theres some excellent programs here like, **PPType**, PPShow, ABFD, View, **Tiny Print**, Takes a text file and when printed through this program the text comes out very small (To the printer). **PPMore**, Font List, Extraxt, PrintFont, **FastJet**, A program for Deskjet 500 users you want to use the resolution enhanced graphic set. **GWPrint II .**
❑ **V411 NCOMM V1.921** The latest version of that excellent Modem program. On of the best Modem programms on the Amiga.
❑ **V413 WORKBENCH 2 & WORK STATION** This is not just another workbench clone. It's a collection of utilities with the Workbench theme. Contents of the disk are as follows, DMouse, 8 Colour Wb, My Menu, XIcon, pointer Anim, WBKalied, XColour, MegaWB, Exploding Windows, NewLock, weasel & Rubme. All will enhance work current Workbench in different ways. **(2)**
❑ **V415 VIDEO SCREENS:1** Another disk packed with excellent back ground pictures for video production work or load them into Dpaint.
❑ **V417 SUPERBENCH & EXTRAS** An excellent repl\-acement disk with more utilities than the original WB **(2)**
❑ **V420 CURSOR BASIC COMPILER** Compile any Amiga Basic program with this utility disk.
❑ **V422 C: COMMANDS** This disk is filled with utilities which can be used in any Startup-sequence
❑ **V424 PDS UTILITIES No 18** Another collection of utilties by us here, Utilities include, **Antiflicker** program, said to stop the flicker in High Res. **Atari Emulator**, Another program to turn your amiga into an ST. **Smart Icon**, This program will change your workbench & smart up the window system. **WBLook**, Another eplacement window program.
❑ **V429 DIGITAL MARKETING DEMO MAKER** A new demo creator and not by Red Sector (2)
❑ **V433 ANIMATION STUDIO** An excellent Animation crestor for you to make your own.
❑ **V435 COMBENCH V1.0** Excellent Extra utilities forthis Workbench replace production.
❑ **V438 OPTI UTILITIES V2.0** This disk is packed with some excellent hard disk utilities.
❑ **V439 AMIGA C: MANUAL II** This manual is the complete C: manual for the Amiga & describes open & work with all parts of the C: system. It also contains various examples, some simple & some morecomplex all the way through the disks a tutorial is there to help you out. **(4)**
❑ **V443 SPECTRUM EMULATOR V1.2 By KGB** Various new features but the main updated feature is that it now has sound ability.
❑ **V444 PRINTER DRIVER UPDATE DISK III** Another update to our printer driver collection. now contains instructionon how to install them.
❑ **V445 JRCOMM V1.02** This is the latest version of the excellent modem based computer program.
❑ **V446 JACK NICKLAUS COURSE DISK 7** Another collection of courses for use with the J N golf Game. requires the Original game.
❑ **V448 V448 / V453 - HOUSE MUSIC SAMPLE COLLECTION** These disks can be sold seperatly, titles are Shamen Samples, KLF Saamples, Bomb the Bass Samples, C & C Music factory samples, Radish samples SEPT & Electronic Samples. (6 Disk Pack).(ST-68+)
❑ **V455 LAND BUILDER** A fractal generating program to generate landscapes.
❑ **V456 LABELBASE V3.0** An Excellent data base program this is very easy to use. Recomended.
❑ **V457 PDS UTILITIES No 19 - BOOT X V4.03** The best Virus killer just got better. It now reognizes 260 boot blocks & is kickstart 2 compatible. **FLAST COPY** Excellent copyier & **System information**
❑ **V458 NIB COPIER** Another coping program. Please check the copyright of the program that you intend to copy. Very good new version.

NEWSFLASH EUROPE

THE NEWSFLASH Magazine is Packed with Editorial & general news, Software News & Reviews, Hints, tips, Entertainment & a creative section, **(2 disk collection.)**

UTILITIES ON THIS MONTHS ISSUE : 21

IFFCon - Converts IFF pictures to workbench icons. **Imploder 4.0** - Executable file compressor. **Deplode** - Uncompresses Imploder exe. **Last hope** - recovers deleted files. **Sys Info V2.36** - displays your amigas complete information. **Beermon** - Complete monitor. All utilities come with full Instructions **Only £4.99**

MEGA DEMOS

❑ **1578 THE SILNTS - GLOBAL TRASH** A Truly superb interactive demo. One of the best.
❑ **1618 KBG MEGA DEMO (2)** This disk is totaly brilliant & realy well presented mega demo. (2)
❑ **1746 ANARCHY - INPIRATION IS NONE** Latest & the best ever mega demo from one of the best Amiga demo groups. Inc Anim
❑ **1748 THE SILENTS - ICE MEGA DEMO** This is there latest mega demos & is totaly stunning.
❑ **1767 GOLDFIRE - ULTIMATE FX** There's some excellent demos lately & here's another.
❑ **1768 DARKNESS MEGA DEMO II** Another well done mega demo disk. Excellent disk.
❑ **1947 THE SILENTS - FRANCE MEGA DEMO** This is our demo of the month. Recomended by us.
❑ **1957 ALPHA OMEGA** The Pure Metal coders present this live and direct from CNN
❑ **1976 ANARCHY - DIGITAL INNOVATION** Another classic mega demo from the Anarchy production live. Do'nt be surpriced to this in AF or CU Amiga.
❑ **1980 VIRTAL WORLDS MEGA DEMO**
❑ **1985 THE REBALS - THE THING** This is the latest Rebals Production and is excellent.
❑ **1987 THE DEVILS - NO REALITY** Loads of sections and excellent music.
❑ **1988 RAY OF HOPE II** This is one of the best graphical mega demos we have seen he at PD-Soft. **DEMO OF THE MONTH SEPT 91.**
❑ **1992 GHOSTLEY SPREADERS** Very Impressive 1st mega demo. Excellent Music & Graphics.
❑ **1993 SUBCONSCIOUS DIMENTION** An excellent display & music selection. Very Good.
❑ **1994 BASE - SUBLIMINAL VISION** Superb Interactive Graphics & brilliant sound.
❑ **1995 KEFRENS - GUARDION DRAGON** The latest production from this great group.
❑ **1996 W.H.A.M - NEW VECTOR DEMO** Nice looking production & excellent music selection.
❑ **1997 DEVILS -** Another excellent production.
❑ **1999 DREAM DEALERS - TRAILS OF A DREAM** Superb product by the Dream Dealers
❑ **2006 AERO 91 - OVER DIMENSIONS** Neat demo with plenty of effects & cool music.
❑ **2028 IBB - MANGAD** This production has been voted **DEMO OF THE MONTH** by all here at PD-Soft. Excellent Sound, music & Grpahics.
❑ **2043 PHENOMENA - OBVIOUS DISASTER** More excellent effects with neat scrolling. Great
❑ **2100 CHAOS - FIRE CREW** Another excellent inter active mega demo with strange effects
❑ **2101 PANIC - 1000 WASTED DREAMS** A great new production from the guys in Panic.
❑ **2042 STEVE WRIGHT** - two more arnie Adverts titles Total Re Heat & Total Re print.
❑ **2058 I'M TOO SEXY** A sampled versionof Right said fred hit record. (2)
❑ **2064 DIET COCA COLA ADVERT** Animation sequence taken from the TV Advert.
❑ **2072 AMPLIFIER II** Excellent follow up to the original . Excellent music disk collection (2)
❑ **2074 LANDING SEQUENCE** An excellent 4Mb animation mcreated by Tobias Richter (4)
❑ **2078 WWF PICTURES** Slideshow (3 & 1mb)
❑ **2081 KNIGHT MOVES** An excellent display of Knights fighting requires 2.5Mb (3)
❑ **2084 TERMINTOR II** sample & pictures
❑ **2091 KICK OFF III** Slideshow from the game
❑ **2099 PSYGNOSIS - HISTORY TRIP** Pictures from all of there excellent computer games.
❑ **2105 QUAD - DEATH BY STERO** Excellent looking music disk from the group Quad.
❑ **2107 TBB - SLAIKKARI II** Party Slideshow (2)
❑ **2110 TARROT II (2)** Excellent prohram with 2 disks

STAR TREK SECTION

❑ **AT03 NCC 1684 Reliant** Shutle fly by. **F15 Jet Anim** By Allen Hastings. **NCC-618 Nelson.**
❑ **AT05 Klingon D7 Cruiser** fires torpedoeswhile passing. **NCC-1864 reliant** Very good.
❑ **AT10 ENTERPRICES** Leaves the Star station dock. **NCC 1701-A.** The classic animation.
❑ **AT14 GRABBER WORKBEE** lands on the Enter-prise Ship. Anim & another NCC 1864 Reliant.
❑ **AT16 THE STAR TREK** Animation of the bridge & various pictures from the films Star trek.
❑ **AT17 THE TWOK NCC-1860** Reliant & the NCC 1701-A-Enterprise. **MENSCH ROBOTER**.
❑ **AT18 TWOK-0** Anim NCC 1860 Avenger & NCC 1701-A-Enterprise. NCC 1089 Grissom.
❑ **AT22 APPROACHING VESSELS** Animation, Binary Flight Wireframe landscape by T.Richter
❑ **AT23 STAR TREK FLEET MANEUVER** NCC-1940 Fly over & by animation. excellent classic
❑ **AT26 THE SHIP** Animation rocking at sea. Star Trek animation **NCC 1701-A** Dry docking.
❑ **AT33 THE PROBE II** Animation & **BRID OF PREY** Animation from Star Trek. **KLINGONHIT**
❑ **AT34 LEAVING SPACE OFFICE** Animation , **DOCKING** Animation from star trek. **ATTACK MODE** Bird of Prey Scout hip in attack mode
❑ **1060 STAR TREK THE NEXT GENERATION** This game is by Terry A. Mc Intosh. v1.47 *
❑ **1081 THE UTLTIMATE STAR TREK** Game by Tobias Richter. v1.0, requires 1Mb & (2) disks
❑ **1107** Star Treking Song (2,2DD)
❑ **1254** Star Trek The Shoot m Up game
❑ **1696** The Star Trek trivia quiz game
❑ **1835** The New Star Trek Game (1Mb)
❑ **2031 STAR DREK MUSIC (2)**
❑ **2033 STAR TREK MEGA DEMO (2)** T.Richter presents a Mega demo of Star Trek pictures.
❑ **SMAUG120** The Star Trek the game by Eric Gustafson US Inport regires 1Mb and (2) disks
❑ **SMAUG156** The Star Trek the game by Jimbo Barbers American version 1Mb and (3) disks
❑ **AMUSE19 TREK73** A strek trek Battle Simul-ator where you can attack klingons & Romulans
❑ **V367 STAR TREK INFORMATION** A Data base of all the original series. Very Detailed.
❑ **V446 STAR TREK SAMPLES** Various sound from the Cast of Star Trek original

DEMOS

❑ **1698 REINCARNATION OF SGT (2) PEPPER** Freaky colourful graphics. Reviewed in AF26
❑ **1740 DRUMS & PIPES** Music collection high Quility sound not to be missed.
❑ **1741 KLF MUSIC DISK** Sator presents this great music disk production disk.
❑ **1750 PINK FLOYD** Another brick in the wall animation. reviewed in most manazines **(6)**
❑ **1762 TERMINATOR II SLIDE SHOW** There's some excellent pictures from the film **(2)**
❑ **1772 HAM PICTURES** Totaly stunning graphics are stored on these disks (3)
❑ **1809 FRACTALGEN SLIDESHOW** An excellent collection od Fractal based pictures.
❑ **1854 WRESTLEMANIA VII (2)** All the Stars of the WWF battle it out on computer disks.
❑ **1866 SEGA ADVERT REMIX** Very funny sample of a remixed Sega advert.
❑ **1867 THE KLF EXTERNAL STEREO REMIX** One of the better house music disks. Stereo
❑ **1951 CRYSTAL SYMPHONIES BY PHENOMENA** Anonther excellent production, recomended.
❑ **2004 TECHNOTRONIC MIX (1Mb)** The Beat Factory Presents this excellent Megamix.
❑ **2010 ELVIRA II PREVIEW** Take a look at the lastest game before the forth coming release.
❑ **2012 DUNGEONS OF EVALON** A preview by A-Cron & Cyberstyle. Excellent Game man.
❑ **2013 AGILITY** Animation
❑ **2021 VIETHNAM CONFLICT** Animation
❑ **2030 JESTER - SONIC BOOM** An interesting music collection by Jester.
❑ **2035 BUNSEN BURNER** Anim of a jet dodging through Fractale Mountains.
❑ **2037 ENIGMA - SADNESS 1** Another cover version of a spectacular music dance track.

GAMES SELECTION

❑ **SMAUG149 MORIA** V3.0 Excellent role playing game with new improved graphics.
❑ **1367 BLACK JACK** A Superb version of the board game Black jack. Conains all the normal features
❑ **1420 DTRIS** Played Tetris Well, This is the best version to Date (With 2 Player option)
❑ **1454 MEGA BALL** (THE BEST ARKANOID GAME,Better that any Full Price Games).
❑ **1486 SOLITAIRE & SOLITAIRE ROYAL** Two very excellent & addictive card games.
❑ **1534 THE HOLY GRAIL** Text adventure simular in styleto the inforgam games.
❑ **1561 TRITWIS** This is the best version of Tetris on the amiga with a 3 play option.
❑ **1622 LORE OF CONQUEST** War game simular in concept to the game RISK.
❑ **1664 THE CASTLE ADVENTURE** Excellent new Text adventure simular to the infocom
❑ **1665 BATTLE FORCE ROLE PLAYING** Fight in robot form within this excellent game.
❑ **1695 NAPOLENIC WAR SIMULATOR** Excellent program sent direct by the author.
❑ **1707 IMPERIUM** Another excellent strategy game based apon Roman time.
❑ **1735 ASTERIODS** 'THE ORIGINAL' Another old classic. Remember that Classic.
❑ **1747 LLAMATRON GAME 2001 By Jeff Minter** Briliant stuff & Excellent production
❑ **1749 SCRAMBLE** 'The Original'Remember that old classic well is now on the Amiga.
❑ **1816 SUPER TWINTRIS** Totally playable. up game with an armed Teenage Turtle.
❑ **1870 PATIENCE'S & DOMINOS** The famous card game, this is the best version to date.
❑ **1964 AMIGA COLUMNS** Famous convertsion of the original game columns. Tetris variant
❑ **1977 POM POM GUNNER** Shoot down the incoming world wor II air planes.
❑ **1984 AIR WARRIOR** The first real flight simul-ator on the amiga with various Air planes to Fly
❑ **2018 JETMAN** Another spectrum classic converted to the amiga. It's JetPak.
❑ **2019 CASTLE OF DOOM** Another adveture game for you to play around with.
❑ **2020 JEOPARDY (RISK)** A converson of that classic board game titled RISK.
❑ **2022 SEA LANCE** The first Silent service type sub war game within our amiga PD collection.
❑ **2054 ATIC ATAC** A rendition of the game from the original Spectrum computer.

HOT NEW AMOS

❑ **APD52 FORMS REALLY UNLIMITED**
❑ **APD146 FRUIT MACHINE SIMULATOR**
❑ **APD151 UNDERSTANDING AMOS** The Amos Tutorial Program Disk. A must
❑ **APD176 AMOS DATABASE MASTER**
❑ **APD314 BLACKJACK TRAINER** This is an excellent copy of the card game blck Jack, various strategy set ups & you can set the computers level of play
❑ **APD315 SILVER BARS & THE EMEMY** This game is a conversion / clone of that old classic ny ocean software hunch back, Use your joystick to jump over various obstructions.
❑ **APD318 BOING** The aim of the game is to get Herbert back home to his village. Use your joystick to move jaster, jump or just slow down. Not the most picturess game in our library but very playable.
❑ **APD325 HANGMAN V2.0** Yes simon Walklate has converted the game hangman to the Amiga. this disk also contains an editor to create your own Puzzles.
❑ **APD326 HYPERBALL** This is the latest version of wooden ball. This is an excellent Battle Pong type game where you can play vs the computer or a friend.
❑ **APD329 AMOS FRUIT MACHINE II** By gary Hunt. This program is as near as possible to the type of fruit machine you can find in any snooke hall or Pub / Arcade. features include Hold, Numbers Held, Winspins, superwins, Bronze/ Silver/ gold Pots, Skill Shots, Stop a win, Cashpot, Gample & collect.
❑ **APD333 AMERICAN FOOTBALL RADIO VERSION** You are a coach of London and you have 5 seasons to win the Amosbowl.
❑ **APD334 SNAKE IN THE GRASS** By peter Harris. the idea of the game is to collection white mushrooms, Avoid red toadstools, Garden hedges & your own tail

RED SECTOR Inc SECTION

❑ **V085 - RED SECTOR DEMO CREATOR :** The Main program used to create demos. Required if you wish to run any of the programs under. Excellent program
❑ **V330 - RED SECTOR EXTRAS DISK 1 :** On this disk are : 32 point Fonts, 16 Point fonts, vector stats, Star fields & music Space Journey - Lorna. By f deadzone Troopers.
❑ **V331 - RED SECTOR EXTRAS DISK 2 :** On this disk are Big logos, litle Logos, Vector Stars, Starfields, Bob Anims, Vector Objects, Vector Ball Objects, 32, 16 & 8 Point Fonts, Also the only Full Documents on the demo maker at present.
❑ **V340 - TSB VECTOR DESIGNER PROGRAM :** The special Bothers presnets The TSB Vector designer V1.1, this program will create filled vector objects, line vectors & bob Coords tables.
❑ **V365 - RED SECTOR MODULES (MUSIC) :** Various excellent music modules for use with the demo maker (all by red sector). modules include Laser Intro, Loading, louzy House 2 & More.
❑ **V374 - RED SECTOR BOBS EDITOR :** Simular to the vector editor ias an idea. It will easyly create Bob routines for the Red Sector Demo Maker Includes various Bobs to help you start.
❑ **V454 - RED SECTOR FONT EDITOR** Now you can create & Edit any fonts. For more fonts to use with the demo maker & this editor see FFP5 Below.
❑ **L17 - DIANETIX RED SECTOR EXTRA DISK 1 :** The IFF Converter lets you convert IFF Pictures into various formats including sprite 4, Sprite 16, Copper, ILBM, Raw Norm, Raw Blit & Outline. This is a Pollysoft licenceware program and costs £3.00.

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Colour Pack 4 (FFP4) Six disks packed with a varied assortment of coloured fonts. in many colours, shapes & sizes. For use with Dpaint programs or any Video production utilities.This pack has some totaly outstanding fonts and for only £15 they give you over 70 fonts to play with. Have fun. Other packs are now stock colour packs 1-4 & mono packs A to B.

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(E2) THE EUROCHARTS BY THE CRUSAIDERS: Issue 12

With the latest Amiga software charts. NOVEMBER 91. The eurocharts gives monthy reviews, and the Olny way to keep bang upto date with the best Mega demos, Utilites and much, Much more.

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2M PRINTER LEADS Used to connect a printer to the Amiga.......... **£6.49**
DISK BOX (40) 3.5 INCH used for save storage for your disk collections.......... **£4.99**
DISK BOX (80) 3.5 INCH used for save storage for your disk collections.......... **£7.99**
DISK BOX (210) 3.5 INCH used for save storage for your disk collections.......... **£19.99**
512K UPGRADES Used to upgrage you computer to 1Mb **Inc a Clock**.......... **£34.99**

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virtual screens scroll when the mouse pointer moves to screen's corner. A3000 owners be warned – this utility doesn't like *Workbench 2.0*, so don't be surprised if you get a visit from the guru!

Value for Money..................8/10

AMIBASE PRO 3

AmigaNuts United

Things move fast in the world of public domain software. As soon as you receive a copy of a PD program, the author seems to have already upgraded the program and another copy is winging its way to your desk. This is particularly true of AmigaNuts' *AmiBASE Professional* of which version 3 has just been released.

Coded entirely in AMOS, *AmiBASE 3* is a competent enough database which is ideally suited to handling simple card file-style databases. When the program is first loaded, it allows you to either load or create a new database. If you create a database, you must first tell the program how many fields each record is to contain, their type, size and name. You can also define *SuperBase*-like external fields which can contain IFF images. Once this is done, you can then start entering records one by one.

All the usual database functions are there in abundance including the obligatory search, edit and deletion of records. Everything works fairly smoothly. This helped along by a very pretty and well designed front end.

AmiBASE 3 is not a bad little database program, but it's still severely limited in its scope. If you want to do nothing more than store such things as addresses, phone numbers etc, then it will do the job very well, but that's about as far as things go. If you're looking for a substitute for a program like *SuperBASE*, then *AmiBASE 3* is not for you. In all though, *AmiBASE 3* is a no-nonsense database.

Value for Money..................7/10

RUNME

AmigaNuts 1186

Now here's a really useful program which should have pride of place on every Amiga hard drive.

Based around INOVAtronics' absolutely brilliant *LaunchPad* utility, *RunMe* allows you to run programs from hard disk without having to flick through endless windows to find it. Simply by telling *RunMe* where the program can be found on your hard disk, it can be run just by clicking on the program's name from a list which is held within the *RunMe* window.

Unlike *LaunchPad*, all the entries for *RunMe* are held within a separate file which is set up using a conventional text editor, by saving the file out to the S: directory on your hard disk under the filename *RunMe.Config*. When *RunMe* is then run, it reads this file into memory and displays all the entries within a scrollable list.

RunMe is one of those programs which is so simple it makes you wonder why no-one came up with the idea before. I've been using INOVAtronics' *LaunchPad* utility on my system for over a year now, during which time it has become an invaluable tool. *RunMe* is so similar; I'm sure you will grow to love it too.

Value for Money..................7/10

POWER LOGO

EdLib Disk 24

Gary Teachout has come up with a nice little Logo interpreter that should be of particular interest to parents who have young children. Logo has been a standard teaching tool in primary schools for years, yet up until now, the only Logo interpreter available for the Amiga was Commodore's own rather expensive version.

Power Logo is an experimental programming language devised by Gary that is based on Lisp and Logo. It is versatile, highly interactive, organises programs as collections of procedures (therefore encouraging structured programming techniques) and includes lists as first-class data objects. Gary's goal was to develop a language with the power and versatility of Lisp, but with the readability of good old Logo, while still providing full access to the Amiga's capabilities. Despite this, *Power Logo* still retains a very high level of compatibility with existing Logo implementations, allowing it to be used as a teaching tool.

In the *Power Logo* programming environment, everything is either a word or a list. Words can be any sequence of characters and are separated from each other by blank spaces, to include a space (or a backslash) in a word it must be preceded by a backslash (\). Numbers are just a special type of word. Lists can be any sequence of objects, which may be either words or lists and are identified by enclosing them in brackets "[]".

As Gary himself admits, *Power Logo* is still very much in its experimental stages, but it's complete enough to be usable. It initially takes some getting used to, but once you've got the hang of its rather strange way of working, you'll be pumping out programs faster than a demented C coder.

Value for Money..................7/10

HARD DRIVE SPECIAL

George Thompson Services

Hard disks are jolly wonderful things, but they aren't always the most reliable devices. I'm sure anyone who owns a hard drive would agree that it's all too easy to lose vast amounts of data at the hands of a hard disk – usually the day before you were due to back the damned thing up.

In an attempt to make the hard drive owner's life a little more bearable, George Thompson Services has released a magnificent two disk collection of hard disk-related utilities which they call their *Hard Drive Special*. Between the two disks, they contain a wealth of handy utilities designed specifically with hard drive owners in mind.

There's the usual collection of hard disk back-up utilities including the classic *MrBackup* and the not so well known *KwikBackup* (which is actually my personal favourite). Both will allow you to back up your hard drive to floppy disk quicker than you can say "head crash!" (OK, that's a bit of an exaggeration, but they are very fast).

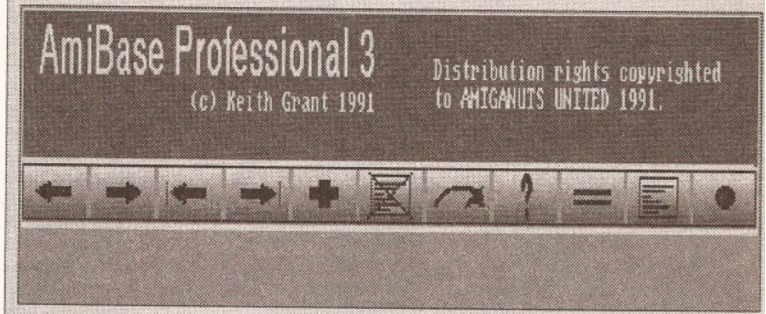
Another very nice program is Scott Meek's *Amiga Hard Disk Menu*, a very snazzy looking menu program which can be added to the startup sequence of any hard drive. This will enable you to load programs on the hard disk from a friendly menu system. It's not quite as good as the *RunMe* program, but it does the jobin question.

In addition there are a number of smaller utilities which allow you to carry out miscellaneous tasks such as repairing tracks, recovering data, monitoring the head position of the drive and the amount of disk space used and available. All utilities are well presented and accompanied with adequate documentation.

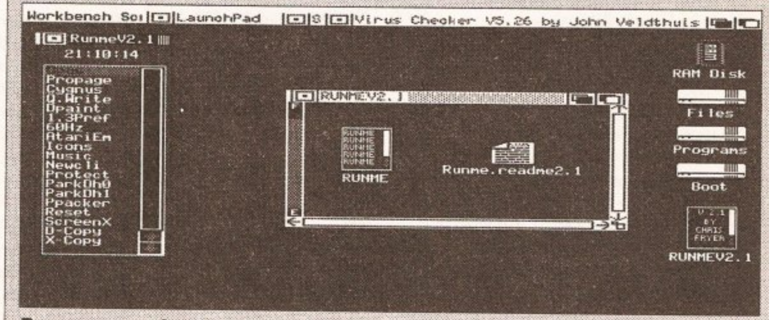
My personal favourite is *Sectorama*, a power-packed disk sector editor written by Dave Joiner, the guy responsible for *Music-X*.

GTS's *Hard Disk Special* is an invaluable collection of utilities that no hard disk owner should be without. Some are more useful than others, but no matter what hard

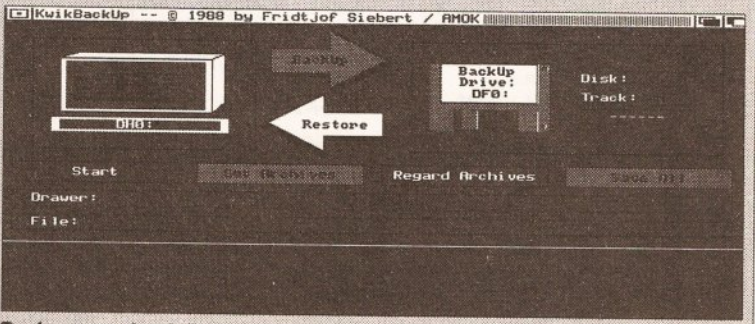
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Keep track of your friends' addresses and telephone numbers with *Amibase III*, the latest release of AmigaNuts' successful PD database program.



Run programs from a hard disk without having to flick through endless directories with *RunMe*.



Back up your hard disk in double quick time with *KwikBack*, only one of many utilities to be found on GTS's *Hard Drive Special*.

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disk-related utility you're after, you're bound to find it here.

Value for Money..................8/10

SCREENMOD

TBAG Disk 58

Screen manipulators are ten a penny these days, but one program still reigns supreme. That program is Steve Tibbet's *ScreenX*, the companion to Steve's other 'X-Utils'. A new challenger to *ScreenX*'s throne is *ScreenMod* from Legendary Design Technologies (great name lads!).

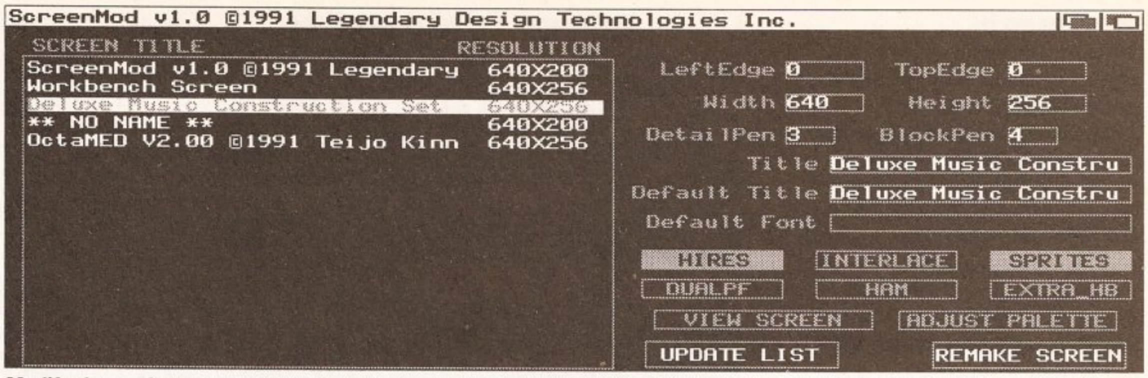
Like *ScreenX*, *ScreenMod* displays a list of all screens that are currently open under Intuition. Simply by clicking on one of the entries in this list, you can alter various screen attributes including screen dimensions (width, height, position etc), screen mode (interlaced or not, resolution, number of colours, colour palette etc) and more besides. Once you've set these attributes up to your liking, a single click on the 'Remake Screen' gadget alters the screen.

One thing that *ScreenMod* can't do is to permanently alter the screen attributes of a particular program. If you exit from a program which has been modified by *ScreenMod* and reload it, the program returns to its original settings. However, *ScreenMod* does provide a way of getting around this limitation, thanks to a second little CLI-based utility called *ScreenSet*.

If, for example, you had a program installed on your hard disk which was loaded during bootup (*SID*, for example), *ScreenSet* would automatically allow you to have the program's screen attributes altered from the startup sequence. This is achieved by setting the attributes in *ScreenMod* and then saving them to disk using the program's 'Save Settings option'. *ScreenSet* then takes this file and modifies any programs mentioned in the file if they are currently loaded.

ScreenSet is a little limited in its scope, but it's a useful tool nonetheless. I would have liked to have seen some facility for saving screens in IFF format. If this had been included, *ScreenMod* would be a serious competitor for that other great screen manipulator, *ScreenX*.

Value for Money..................6/10



Modify the attributes of any screen opened under Intuition using *ScreenMod*. With it you can change the size, type, number of colours, palette and even the name of any screen.

EDUCATIONAL

FUN2LEARN SERIES

AmigaNuts disk 1146

The release of Mandarin's AMOS has done an lot of good for the state of Amiga PD. Apart from the rush of AMOS-produced games and demos, coders have caught on to the fact that AMOS is also a fine utility for producing educational software. Mandarin proved this with the release of its *FunSchool 3* series, all of which were coded using AMOS.

The latest AMOS-produced educational software to be released into the Amiga PD libraries is the *Fun2Learn* series from ArtWerx Software (no, I haven't heard of them either!). Consisting almost entirely of pretty graphics and catchy tunes, the 3 programs which make up the package are not only educational, but – more importantly – fun to use. Here's a rundown of the 3 programs.

SPELL4FUN

OK, the name's a little naff, but the program most certainly isn't. The basic idea is to teach young children (aged between 5 and 7 years) the correct spelling of twenty basic words. For each word, the program shows a picture and three spellings of the word, two of which are incorrect. Using the mouse, the child must move the on-screen graphic so that it points to the correct spelling.

The only real gripe I have with *Spell 4 Fun* is that it is very limited. As I mentioned earlier, the program only comes with twenty words built into it, which won't exactly tax most children. Once they've completed all twenty, the program is rendered almost useless. It would have been improved beyond measure if ArtWerx had built in some facility for adding your own words to its dictionary. Definitely a missed opportunity.

MATHS4FUN

This program didn't actually work on the review disk that was sent to me, but it does sound good. The basic idea is to encourage mathematical skills by getting the children to perform basic arithmetic. The child is given three toys which are chosen at random from a shop window. The child must then note down how much each toy costs by adding the three figures together to come up with the total cost.

XTABLES

XTables is by far the best of the three programs, combining a game with a times-table program. The basic idea is to guide the onscreen sprite, using a joystick, from the start position at the top left hand corner of the screen to the exit at the bottom of the screen. Twelve fruits stand in its way and they can only be passed by answering a times-table question. Each screen is based around a single times-table (starting with the the 2x table) with each consecutive screen advancing to another times-table.

XTables is a good piece of software which is not only a great advert from PD in general, but the quality of Mandarin's AMOS. If ArtWerx continue to produce educational software of the same standard of all three programs, I can see a bright future in store for PD educational software.

Value for Money..................9/10



Pretty graphics and a very catchy tune come together in this fine AMOS-produced educational program.

MUSIC

OCTAMED 2.0

AmigaNuts United

Originally released as a PD program, Teijo Kinnunen has enhanced his acclaimed MED utility beyond belief and turned it into a semi-commercial release that can give any of the competition a run for their money. It's still available from AmigaNuts, but you have to pay £20 up front if you want a copy. Still, this method of payment beats shareware anyday!

Although *OctaMed* supports MIDI, it is primarily a package designed to allow you to create fairly complex tunes using sampled or synthesised instruments played via the Amiga's internal sound chip. At its simplest level, *OctaMed 2.0* uses the same tried and tested *SoundTracker*-like grid system for the entry of sequence data.

However, if this form of note entry reduces you to a cold sweat, then you'll be pleased to learn that the new version of *OctaMed* now allows you to create sequences (or 'patterns' as they should be called) using an ultra-friendly stave-based editor. Most people should find this a lot easier to get on with than the usual hex-based editing of such programs as *Sound Tracker* and *TFMX*.

But what really separates *OctaMed 2.0* from the competition is its ability to play a maximum of eight instruments simultaneously. Theoretically this shouldn't be

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possible (the Amiga only has 4 sound channels), but Teijo Kinnunen has certainly succeeded.

OctaMED is a great program made even more attractive by its amazing price tag. After shelling out twenty quid, It would have been nice to have been supplied with a printed manual – the manual is held on disk as a text file, so it's worth printing this out if you've got access to a printer. In reality though, *OctaMED* is just so easy to use that you really don't even need that manual.

In all, *OctaMED* is one of the few bargains around at the moment. If you're feeling musical, then why not check it out for yourself!

Value for Money..................8/10

MODULE MASTER

TBAG Disk 58

With so many *Sound Tracker* and *MED* clones now available, keeping track of scores from the various packages can be a nightmare. Despite the fact that Commodore has encouraged developers to conform to standards (IFF being a prime example), PD programmers seem to have almost entirely ignored this request. So what do you do if you've got a music module composed with one of the many *Sound Tracker* clones and you want to play it? Treat yourself to a copy of *Module Master* of course!

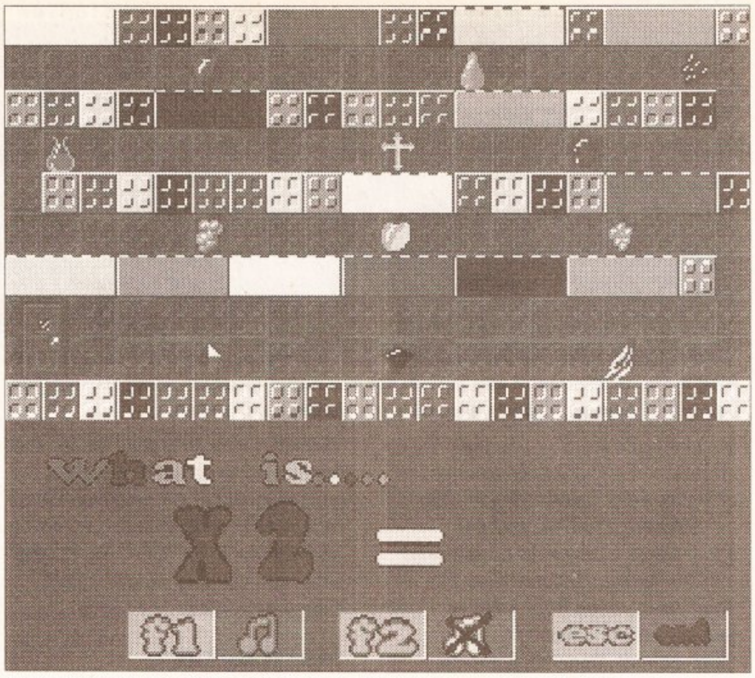
Module Master is a feature-packed module player written by a chap who likes to call himself Night Vision. The current release isn't exactly extensive in its coverage of module file formats, but it can cope with some of the more common types. These include *Sound Tracker* 15 and 31 instrument files, *NoiseTracker* and *Future Composer* files.

One surprising omission from the program is the lack of support for Teijo Kinnunen's MED, a PD *Sound Tracker* clone which has quickly established itself as something of a standard. Perhaps the program's American origins had something to do with it, but in any case it's an unforgivable omission.

What's so nice about *Module Master* is its control panel which is modelled on standard tape deck controls. There's the usual buttons to stop, pause and play a module, plus a very useful rewind and fast forward option. You can also view your tune through a scope display. It may not be the most useful feature in the world, but it looks good!

Module Master is well worth owning. The lack of MED support is unfortunate, but then nothing is perfect. If Night Vision were to extend the program a tad, I would recommend it whole-heartedly.

Value for Money.................7/10



How are your times-tables? Well, they'd better be pretty good if you're to complete *XTables*.

GRAPHHICS

HAMLAB

AmigaNuts 1149

I can't quite see the point of this program, although I do find it interesting. Written by Dreamer of WizzCat, *HAMLAB* was devised to convert IFF ILBM-format images from other computers for use on the Amiga.

The program was specifically designed to handle PC ILBM files (including VGA), but the author claims the program will handle most forms of IFF ILBM file from other machines including the Macintosh.

The author recommends some rather outrageous system requirements for the program – an '040 based A3000 with 300Mb hard drive and 2Mb of chip RAM – but I'm sure such a configuration isn't really necessary (it ran well on my B2000 with a 90Mb hard drive and 9Mb of RAM!). It will run fine on a standard 512k machine; however memory turns out to be somewhat tight, especially when you are working with much larger and more colourful images such as VGA. In practice, I would say that a 1Mb Amiga is definitely the most usable configuration.

HAMLAB can carry out a number of operations on images including colour reduction and image scaling. The results can be saved in standard Amiga IFF, but the program also supports an extra file format devised specifically by the author. Images saved under DreamHAM format look a lot better than standard HAM images, but they can only be viewed using *HAMLAB*.

HAMLAB has a lot of potential, but this current release fails to achieve what it set out to do. If the author had built support for other file formats into the program (PCX, TIFF, PICT etc), then *HAMLAB* would be a genuinely useful program. As it stands, *HAMLAB* is of very limited interest.

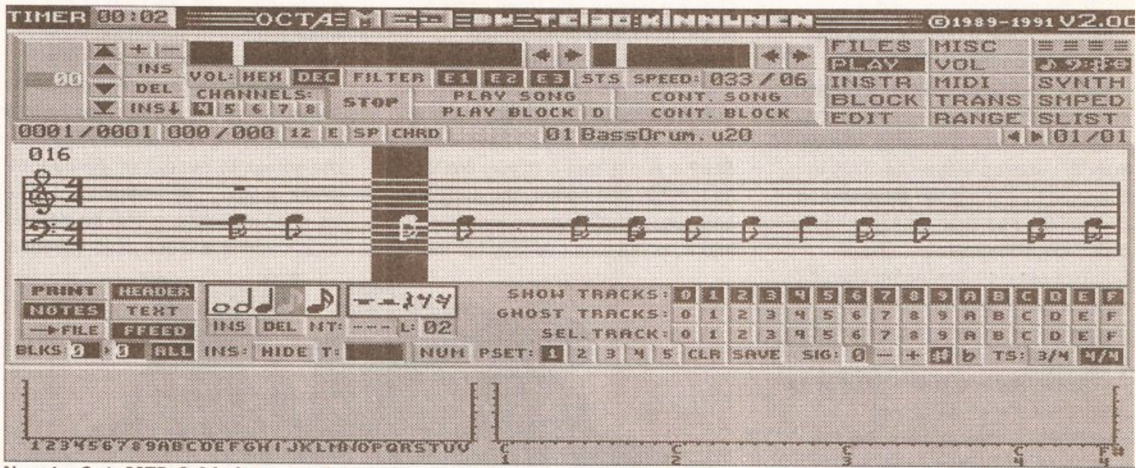
Value for Money..................5/10

LANDBUILD

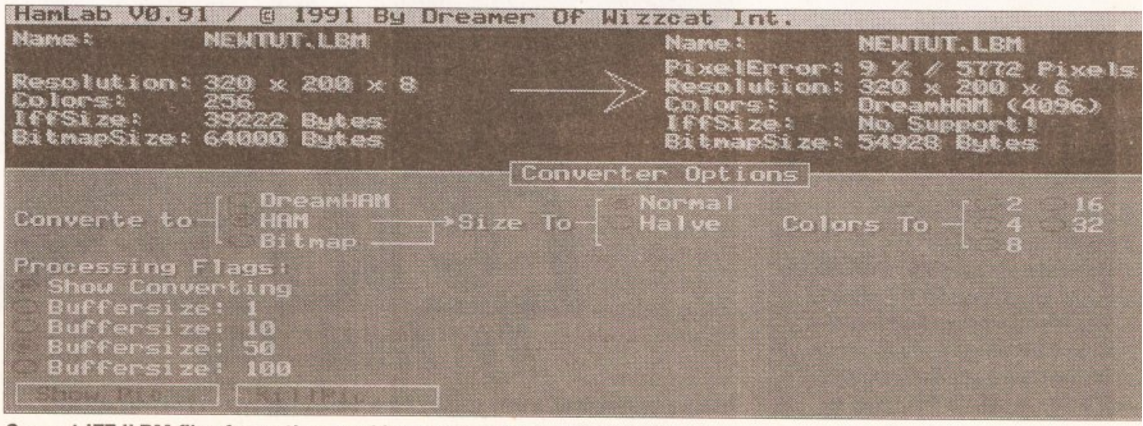
AmigaNuts 1190

The *Mandelbrot* always used to be the weirdos' favourite, but fractal landscape generators have rapidly

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New to *OctaMED 2.0* is its powerful notation facility which allows you to view your musical masterpieces in traditional score format.



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taken over that position.

Nowadays there are so many fractal generators available both commercially and through the PD libraries that choosing the one to suit you has become an almost impossible task.

LandBuild is the latest arrival which – like all fractal landscape generators – promises to give you the power to sculpt whole new worlds by means of fractal mathematics. Written by a clever chap who goes by the name of David Odd, *Landbuild* runs from an Intuition-based front end with pull down menus and gadgets.

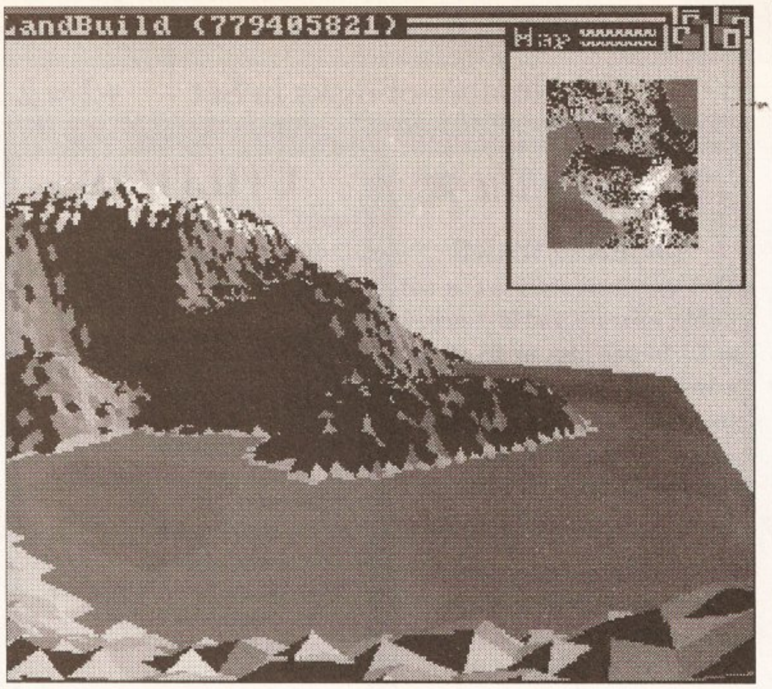
Two versions of the program are supplied – one for 512k A500 owners and another for all you lucky 1Mb Amiga owners. Both versions are similar, but the 1Mb version has a file requester.

The program's main screen is split into 3 windows. The first is the program's main output window which displays the fractal landscape in all its 3D glory. Next to this is a smaller window containing the current 'seed' value for the landscape and finally the map window which displays a bird's eye view of a fractal scene. The map window enables you to position the camera and to choose the direction in which to point it.

The program works in 3 resolutions which dictate how many polygons (or facets) will be used for your scene. More polygons means more detail, but you've also got to suffer the inevitable slowing down of rendering times. The overall quality of scenes is fairly good and compares well with PD offerings although they're perhaps not as good as the results obtainable from commercial landscape generators like *VistaPro*.

The only bad thing that I could find against *LandBuild* is its speed of operation. Even when generating scenes at the lowest resolution, scenes can take an absolute age to appear. Complaints aside though, *LandBuild* is certainly one of the best fractal landscape generators to be released for the Amiga. It's comprehensive, easy to use and comes with some excellent (and very readable) documentation. Fractal fans should check it out!

Value for Money..................7/10



Play God with a copy of *LandBuild*, an absolutely brilliant fractal landscape generator from AmigaNuts United.

VIDEO TEXT DISPLAYER

AmigaNuts 1199

Quality desktop video software is in very short supply throughout the PD libraries, but a few gems are available. Take the *Video Text Displayer* from AmigaNuts United. Based around Martin Round's brilliant PD program *sMovie*, the *Video Text Displayer* is ideally suited to desktop video applications.

At its simplest level, *VTD* can be used as a direct replacement for traditional text display programs such as Commodore's own *More*, allowing you to view text files much more easily and quickly than *More* could ever hope to. However, the program doesn't really come into its own until you start playing around with its DTV capabilities.

What's so special about *VTD* is that it allows you to mix different fonts in your documents using a set of powerful control codes which mustbe embedded in your text files using a standard text editor.

> "The Mandelbrot always used to be the weirdo's favourite..."

The control codes allow you to perform all sorts of fancy effects including the mixing of different fonts within a single document, control over the scroll rate plus a lot more besides. Text can be scrolled horizontally, but *VTD* is a lot more at home when it is scrolling text vertically.

The speed and type of scrolling can be controlled automatically using the embedded commands, but *VTD* also enables you to control scrolling yourself using the mouse. Simply by dragging the mouse up or down, the scrolling rate is speeded up or reduced proportionately.

For the generation of simple credits and titles for home movies, *VTD* is an absolutely superb program that is well written and easy to use.

VTD has the potential of very powerful PD desktop video software. If the author was prepared to put in the extra work to make it a slightly more complete package, I could see *VTD* becoming a real PD classic.

Value for Money..................7/10

SPECTRAPAINT

Scanner 3 Disk 2

Considering the overall quality of Amiga PD, it comes as a real surprise to find that there are very few decent paint packages available. One of the best of those is Twilight Software's *SpectraPaint*, an AMOS-produced paint package which is as good as many commercial offerings. It's not quite a *Deluxe Paint 4*, but then, what would you expect?

SpectraPaint is modelled very closely on *DPaint* and certain similarities are in evidence. For starters, when the program is first loaded, it presents you with a very *DPaint*-like screen mode requester which enables you to choose between all the usual non-HAM screen modes including low res, medium res and interlaced screen modes. For NTSC users, there's a toggle gadget which allows the program to be switched between PAL and NTSC screen modes.

Unlike *DPaint*, *SpectraPaint*'s tools icon strip runs horizontally along the bottom of the screen but all the *DPaint* gadgets are there including the obligatory freehand draw, fill, box, circle and airbrush functions. Some of the functions are a little limited in their implementation, but then *DPaint* has spoilt me rotten!

One tool which I did particularly like is the brush shrink function. This enables you to cut out a rectangular area as a brush and then paste it down into another rectangular areawhich you are working on.

OK, nothing special so far, but what sets this apart is the fact that the brush can be instantly enlarged or reduced by dragging out a different sized rectangle for the destination.

Pictures can be loaded and saved in standard IFF format, so you can pull in pictures from all those PD slideshow disks which you've had hanging around. Brushes are also supported, allowing you to take advantage of the large amounts of clip-art available.

A HAM-only release of *SpectraPaint* is due in December and it's shaping up to be one hell of a package.

PD HAM paint packages are ever rarer than conventional paint packages, so *SpectraPaint* HAM could be worth investigating. As always though, you can expect a full review on these pages as soon as Twilight release it.

BLITS & BOBS

"Painting is a blind man's profession. He paints not what he sees, but what he feels, what he tells himself about what he has seen."

Pablo Picasso

SpectraPaint is no *DPaint*, but it's about the best PD Paint package available. It's a shame that the program doesn't give you more control over some of the basic painting tools (a resizable airbrush would be great!).

Perhaps Twilight will take note of my comments on little adjustments, which would make Spectrapaint just that bit moreattractive and go ahead and upgrade a program which does have a lot going for it. If you can't quite stretch to something like *DPaint*, then *SpectraPaint* is a worthy substitute.

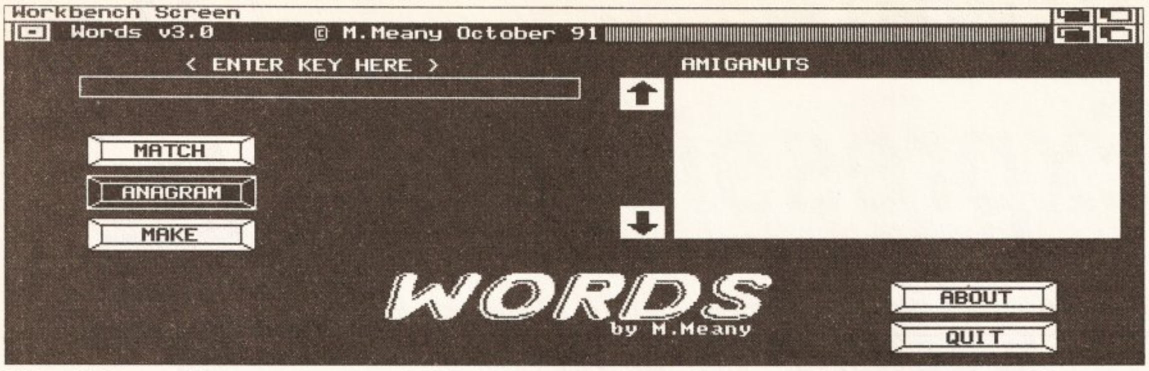
Value for Money..................7/10

QUICKIES

With so many high quality PD titles being released every day, it's impossible for us to cover each and every one.

Here's a rundown in brief of some other PD titles which are worth checking out.

continued on page 166



Solve all those word games and puzzles with Mark Meany's *Words 3*. This latest version comes complete with an even larger glossary too, making the program far more comprehensive.

continued from page 164

WORDS 3

AmigaNuts

Puzzle game addicts will love the latest release of Mark Meany's classic *Words*, a powerful anagram solver which has recently been upgraded to make it leaner and meaner than ever before. This latest version is enhanced by a much larger glossary which makes the program far more comprehensive.

Value for Money..................7/10

CONVERTERS

17 Bit Disk 1221

If you've ever wanted to take an image file from another type of computer and use it on your Amiga, then this is the disk for you. Complete with MessyDOS file transfer software, 17Bit's *Converters*' disk is packed with utilities to allow you to convert images from the ST, PC, Mac and even the C64 to Amiga format. Highly recommended.

Value for Money..................6/10

VECTOR DESIGNER

Essex Computer Systems

Design 3D demos which would have Jez San green with envy with a copy of the *Vector Designer* from Essex Computer Systems. It's a little hard to use, but the results are definitely more than worth it. You can create all sorts of wonderful 3D objects and then incoporate them in your own 3D demo.

Value for Money..................7/10

PHONE LINE WATCHER

TBAG Disk 58

PLW is a neat program designed with Comms users in mind. Running in the background, it keeps track of the total number of calls made and the number of successful logins. If it sounds like your cup of tea, then keep an eye out for it.

Value for Money..................6/10

MIDI LIBRARY

Fish Disk 227

You can now create your own MIDI applications with this very powerful programmers' library.

Whether you're coding in C, Modula-2, assembler or Basic, the MIDI Library enables your programs to talk to MIDI-compatible devices, such as synthesizers, without having to mess around with complicated protocols yourself. Programming MIDI has never been so easy!

Value for Money..................8/10

IBEM

Office Choice PD

A PD IBM PC Emulator? You'd better believe it! *IBEM* is a complete software-based IBM XT emulator that will allow you to run all those PC programs such as *WordStar* and *dBASE* on your Amiga for the price of a disk. What's more, it multitasks, so you can run PC and Amiga software concurrently. Even Bitcon's KCS card can't do that!

Value for Money..................9/10

CLOCKTICK

TBAG Disk 58

Bored of the *Workbench* sleepy mouse pointer? Now you can replace it with an animated *Workbench 2.0*-like clock with *ClockTick*. OK, it's not terribly useful, but it looks better than the standard sleepy pointer!

Value for Money..................7/10

AS

UK PD HOUSES

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Nottingham NG1 1GD
☎ 0800 252221

AMOS PD Library (also Deja Vu)
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Wigan WN6 7AA
☎ 0942 495261

Anglia PDL
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☎ 091-284 7976

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Co Durham SR8 1NZ
☎ 091-587 1195

Virus Free PD
23 Elborough Road
Moredon, Swindon
Wilts SN2 2LS
☎ 0793 512321

Workbench PD
1 Buccluech Street
Barrow-In-Furness
Cumbria LA14 1SR
☎ 0229 870000

BUYING ADVICE FOR SHOPPERS

Whether buying over the phone or at a local store, here's our advice on how to get what you want

BUYING IN PERSON

- Where possible, always test any software and hardware in the shop before taking it home, to make sure that it works properly.
- Make sure you have all the necessary leads, manuals or other accessories you need.
- Don't forget to keep your receipt.

BUYING BY PHONE

- Be as clear as possible when stating what you want to buy. Make sure you confirm all the technical details of what you are buying. Some things to bear in mind are version numbers, memory requirements, other required hardware or software and compatibility with your particular model of Amiga (that is, make sure you know which version of Kickstart you have).
- Check the price you are asked to pay, and make sure that it's the same as the price advertised.
- Check that what you are ordering is actually in stock.
- Check when and how the article will be delivered, and that any extra charges are as stated on the advert.
- Make a note of the date and time when you order the product.

BUYING BY POST

As with buying by phone, you should clearly state exactly what it is you are buying, at what price (refer to the magazine, page and issue number where it's advertised) and give any relevant information about your system set-up where necessary. You should also make sure you keep copies of all correspondence both to and from the company concerned.

MAKING RETURNS

Whichever method you buy by, you are entitled to return a product if it fails to meet any one of the following three criteria:

- The goods must be of 'merchantable quality'.
- The goods must be 'as described'.
- The goods must be fit for the purpose for which they were sold.

If they fail to satisfy any or all of the criteria, then you are then entitled to:

- Return them for a refund.
- Receive compensation for part of the value.
- Get a replacement or free repair.

When returning anything, ensure that you have proof of purchase and that you return the item as soon as possible after receiving it. For this reason it is important that you check the hardware or software as soon as it is delivered to make sure everything you ordered is there and works as it is supposed to.

HOW TO PAY

Paying by credit card is the most sensible way, whether buying in person, by post or on the phone, because you may be able to claim the money from the credit card company even if the firm you ordered from has gone bust or refuses to help sort out your problem.

Otherwise, you should pay by crossed cheque or postal order – never send coins or notes through the mail.

GETTING REPAIRS

Always check the conditions of the guarantee, and servicing and replacement policy, so that you know what level of support to expect. Always fill in and return warranty cards as soon as possible, and make sure that you are aware of all the conditions contained in the guarantee.

BUYING PD

Even though PD software is relatively inexpensive, you should still apply the guidelines set out above, making sure that you confirm all orders as clearly as possible.

Shopping around is still important when buying PD because different houses charge different prices for the same disks. There is no set pricing structure for disks, but bear in mind that PD houses are, in theory, supposed to be non-profit making operations. AS

A CHECK LIST FOR MAIL ORDER BUYING

1 Make sure you know exactly what you want. Draw up a checklist of the specifications you are looking for and what you want it to be able to do. Check with the suppliers that their product matches your list

2 Will the product you have in mind work with your existing set-up, and anything else you are planning to buy?

3 Can you see a demonstration? Many products are on display at computer shows around the country.

4 Are there any hidden extras? Does it need 1Mb to run, or a hard disk?

5 What technical support is provided by the supplier? Does the manufacturer offer after-sales advice? Check before you buy.

6 Check the guarantee terms. How long is the free warranty? What does it offer?

7 Draw up a list of these details and make them a condition of your order.

8 Check the price and delivery details when you order, and make a note of them.

9 Note down when you placed the order and who you spoke to.

10 When it arrives, check everything carefully. If anything is missing, don't use the product at all – contact the supplier. If it doesn't work, make the obvious checks such as the fuse. If it still doesn't work don't try to fix it – contact the supplier.

ADVERTISERS INDEX

WIN • WIN • WIN • WIN • WIN • WIN • WIN • WIN

Get your hands on an A500 Plus

Enter the great Amiga Shopper Christmas Competition and become part of the new era of Amiga computing with a well wonderful A500 Plus, kindly donated by Gordon Harwood Compters

We've got a little carried away here in the *Amiga Shopper* office, what with Christmas coming and the release of the A500 Plus. Not only do we review games in this issue, but we're giving away a free computer!

After reading the first *serious* review of the Amiga 500 Plus on pages 139-142 of this issue, who could fail to want one? It offers the most significant development for Commodore since the release of the Amiga itself all those years ago, and confirms the Amiga's status as a machine to be reckoned with. You can rest assured that we at *Amiga Shopper* are firmly behind this latest development, and will be taking it into account with all future reviews.

Many bugs and inadequacies of the old Amiga which have made it less than a pleasure to work with have been ironed out. Lots of new features have been added: new graphics modes, more memory space for graphics, the new *Kickstart* and the new, 3 dimensional look *Workbench.* This machine will seriously increase your productivity: use the *Workbench* with ease, open a Shell with joy, create bigger and better pictures and animations, impress your loved ones! And you thought you spent too long in front of the screen already!

Mark Smiddy, registered Commodore developer and all-round Amiga expert, had this to say in concluding his analysis of the all-singing, all-dancing A500 Plus:

"The new *Kickstart* and Workbench are everything we could ever have wished for. They are something no serious Amiga user can afford to be without."

And now you can have one for nothing – be the first on your street to own Commodore's latest electronic marvel. Those nice people at Gordon Harwood Computers, overwhelmed by the Christmas spirit, have put an Amiga 500 Plus up for grabs exclusively for readers of *Amiga Shopper.*

It's not just the computer you can win, of course, but the whole Cartoon Classics bundle. Inside you'll find a TV modulator (no need for a monitor) and a fantastic bundle of software. There's Electronic Arts' renowned paint package, *Deluxe Paint III*, probably the most popular serious package on the Amiga; Mindscape's ecologically aware *Captain Planet* game; the acclaimed *Lemmings* from Psygnosis, and Ocean's *The Simpsons – Bart Versus The Space Mutants*, based on the cult TV cartoon. The whole lot is worth £399.95.

Are you salivating yet? You want to win it? OK, OK, calm down. It's easy. All you have to do is have a go at the 3 incredibly simple questions on the right and get your answers in to us at *Amiga Shopper* by January 7 (and don't forget to allow for the Christmas postal delays).

Put your answers on a postcard or the back of a stuck down enevelope, along with your name and address and send it to:
Amiga 500P Competition
Amiga Shopper
29 Monmouth Street
Bath
BA1 2DL

Needless to say, the usual small print applies: the editor's decision is final, employees (that means you, Alison) and relatives cannot enter, and *no* cheating!

Oh, and may we just say, Merry Christmas to all our readers. AS



You've seen it on the cover, now see, touch and use it in your own home – Commodore's new Amiga is a great way to start the New Year, and no mistake

LUCKY WINNER!

In our November issue we gave you the chance to win one of the great VideoCenter Plus genlocks from G2 Systems. At long last we are able to announce the lucky winner, but not before filling you in on the correct answers to the competition.

The answers were as follows:

1) VHS stands for Video Home System

2) Video means "I see" in Latin.

3) Betamax was the name of the video system launched by Sony which failed to make an impact during the Seventies.

Following a phenomenal response, may we give a big thank-you to all who entered and congratulate the winner who is: Mr MSC Christoforou of East Finchley, London.

3 SIMPLE QUESTIONS

QUESTION 1
Which famous artist helped launch the original Amiga?
a) Salvador Dali
b) David Hockney
c) Andy Warhol

QUESTION 2
What is the maximum amount of Chip RAM that the Agnus chip on the A500 Plus can address?
a) 0.5Mb
b) 1Mb
c) 2Mb

QUESTION 3
What is Andy's favourite colour? No, only joking. The real question is: With reference to the Amiga's 4096 colour mode, what does the acronym HAM stand for?
a) Hold And Modify
b) High And Mighty
c) Huge Amounts of Memory

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Photography: Philip Antony, Lancs. Yamaha VMAX kindly loaned by Andy Pennington

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